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ABSTRACT

The 1978 annual meeting featured 60 papers in 15 subject matter sessions. Authors were primarily from the South, but senior authors from Kansas, New Mexico, and New York also presented papers. Session A, the plenary session, included three papers on contributions of multidisciplinary research to university research and public service programs. Subject matter and number of papers presented in the other sessions were: B. Occupational Prestige (2 papers); C. Status Attainment (3 papers); D. Rural and Urban Culture (1 paper); E. Rural Poverty (3 papers); F. Community Satisfaction (4 papers); G. Occupational Choices (3 papers); H. Community Development (3 papers); I. Demography and Ecology (2 papers); J. Methodology (2 papers); K. Agricultural Institutions (2 papers); L. Rural Institutions (4 papers); M. Extension Sociology (4 papers); N. Potpourri (2 papers); O. Southern Regional Project S-114 (1 paper on "Students enrolled in Colleges of Agriculture at Southern Land Grant Universities: A Preliminary Overview"); and P. Southern Regional Project S-120--"Social Organization for Development of Low Income Rural Counties" (5 papers). This document includes the papers given, history and operating procedure of the Rural Society section, minutes of 1977 and 1978 annual meetings, and a list of all known conference participants. (DS)

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RURAL SOCIOLOGY SECTION
SOUTHERN ASSOCIATION
of
AGRICULTURAL SCIENTISTS

PROCEEDINGS OF 1978 ANNUAL MEETING

HOUSTON, TEXAS

FEBRUARY 5 - 8, 1978

Rural Sociology in the South
1978

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1978
PROCEEDINGS

Southern Association of Agricultural Scientists

Rural Sociology Section

Annual Meeting, Houston, Texas
February 5-8, 1978

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FOREWORD

This publication comprises the PROCEEDINGS of the 1978 annual meeting of the Rural Sociology Section, Southern Association of Agricultural Scientists, held in Houston, Texas, February 5-8, 1978. At this meeting, a total of 60 papers were presented in 15 subject-matter sessions and a Plenary session. The authors are primarily from the South, but senior authors representing Kansas, New Mexico and New York presented papers.

Sessions included at the 1978 annual meeting are listed on the following page and coded by sections in this publication. Sections "A" through "P" comprise the papers submitted for these PROCEEDINGS. A brief history of the Rural Sociology Section, operating procedures for the Rural Sociology Section Section, and Minutes of the 1977 and 1978 annual meetings are in Section "Q". Authors provided copies of their papers for this publication but some presented papers were not submitted; a copy of the entire 1978 annual meeting program is presented in section "R". Readers can, of course, communicate directly with authors and other participants of the annual meeting. A list of all known participants is presented in section "S".

The officers of the Rural Sociology Section wish to express their appreciation to the authors, discussants, session chairpersons and all the social scientists participating in the 1978 annual meeting. Mr. and Mrs. Laurence H. Walker are to be commended for their efficient coordination of the 1978 (and all recent) annual meetings of the Southern Association of Agricultural Scientsits. The President Elect is particularly grateful to the administrators of the Department of Agricultural Economics and Rural Sociology, College of Agricultural Sciences, Clemson University, for resources to compile these PROCEEDINGS.

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A Plenary Session
B Occupational Prestige
C Status Attainment
D Rural and Urban Culture
E Rural Poverty
F Community Satisfaction
G Occupational Choice
H Community Development
I Demography and Ecology
J Methodology
K Agricultural Institutions
L Rural Institutions
M Extension Sociology
N Potpourri
O Regional Project S-114
P Regional Project S-120
Q History, Procedures, Minutes
R 1978 Annual Meeting Program
S Participants, 1978

Section A

PLENARY SESSION

MULTIDISCIPLINARY RESEARCH: CONTRIBUTIONS TO UNIVERSITY RESEARCH AND PUBLIC SERVICE PROGRAMS

"Strange Bedfellows and the Lumpy Mattress of Joint Scientific Inquiry: Some Problems and Prospects of Multidisciplinary Research." Clifton D. Bryant, Head Department of Sociology, Virginia Polytechnic Institute and State University.

"Multidisciplinary Research: A Home Economist's Perspective for its Contributions to University Research and Public Service Programs." Sarah M. Shoffner, Director, Home Economics Center for Research, University of North Carolina at Greensboro.

"Multidisciplinary Research: An Economist's Perspective." Luther Tweeten, Regents Professor of Agricultural Economics, Oklahoma State University.

STRANGE BEDFELLOWS AND THE LUMPY MATTRESS OF JOINT SCIENTIFIC INQUIRY: SOME PROBLEMS AND PROSPECTS OF MULTI-DISCIPLINARY RESEARCH

Clifton D. Bryant*

Multi-disciplinary research, or scientific inquiry involving representatives of two or more disciplines at all stages of the research, is a controversial enterprise, fraught with possibilities, but with many inherent handicaps and difficulties. At first glance, the concept of multi-disciplinary research would almost appear to be an attempt to reverse or subvert the ongoing trend of increasing specialization via discreet disciplines and constituent unique and esoteric subdisciplines, which fosters and is also facilitated by, the geometric expansion of knowledge. Viewed from this perspective, multi-disciplinary research would perhaps seem anachronistic, even futile, not unlike King Canute's attempting to hold back the irresistable waves, or the Luddites seeking to reverse the machine impetus. Multi-disciplinary research, however, is no such effort at reversing the inevitable, but rather is an attempt to harness the trend of specialization and render the conceptualizations and methodologies of disparate disciplines more compatible and utilitarian. Multi-disciplinary research brings the insight of multiple perspectives and affords a three-dimensional, and thus more complete, view of the phenomena under study, as opposed to a flat two-dimensional, albeit often penetrating, view provided by single discipline research. Multi-discipline research has been brought to bear on problems of enormous complexity and has, in some signal instances, proved successful to a degree hitherto undreamed of. Such instances might include Project Manhattan of World War II that accomplished to unleash atomic energy within an almost unbelievably short span of time. Although we tend to think of that enterprise as essentially a physics project, in matter of fact the knowledge and research efforts of many scientific disciplines were needed and employed. Perhaps a more vivid illustration exists in the form of the aerospace program which put an American space vehicle on the moon within a decade after we were stunned by the sudden existence of Russia's Sputnik satellite. The successful moon voyage, and all of the attendant space accomplishments, were made possible by the largest multi-disciplinary research effort in the history of the world. Scores, if not hundreds of disciplines, were, and still are, involved in our space program. Numerous other multi-disciplinary research projects of much smaller scale, however, have enjoyed similar productive success. Furthermore, there has been a general recognition among many disciplines of the need for, and benefits of, multi-disciplinary research efforts and that many of today's problems call for the insights of a number of disciplines. Walsh, _et_. _al_., in speaking to this concern, has asserted, for example:

> Today, however, there is a growing need for engineers to draw on the biological, social, and behavioral sciences. These disciplines are becoming interdependent in an effort to account for the human as well as technological dimensions necessary to solve a majority of the problems facing

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> society. As a result, there is a need for an understanding of interdisciplinary group process and of how future professionals can be trained to function effectively as members of interdisciplinary task forces. (Walsh, Smith, and London, 1975; 1067).

In spite of the apparent success of some multi-disciplinary enterprises and the seemingly enthusiastic broad-based espousal of such research by scientists in many disciplines, it is not without pitfalls and drawbacks. The problems and difficulties of multi-disciplinary research have tended to generate, on the part of many scholars, trepidation and reluctance to embark on joint research efforts, regardless of the possible benefits and the enhanced likelihood of obtaining more meaningful results.

The problems of multi-disciplinary research also have been the subject of considerable exposition in the professional literature of numerous disciplines. To cite one such commentary, Sims and Baumann (1975), a psychologist and geographer respectively, attribute the "stresses and strains" of research conducted by an interdisciplinary team to four major "fault lines" to phrase it in geological metaphor. The first of these which they identify is the very basic problem of determing what to study and how the research question should be conceptualized. Single-discipline research is predicated on a particular model of the phenomena being studied. Multi-discipline research sometimes involves a conflict of models. Some multiple-discipline research simply never gets beyond this point because the conflict of models cannot be resolved. Sims and Bauman suggest as a second point of difficulty, the problem of research design. Even if the question of conflicting models can be resolved, the problem of basic differences in research techniques, medological approaches, and expectations of procedures are often so diverse that a utilitarian compromise or concensus is difficult, if not impossible, for the very outcome of the research may well hinge on the selection of particular methodologies and the identification of variables to be explored. Thirdly, they postulate that "frictions become most intense" in the logistics of data collection. The selection of data collectors is most critical to the outcome of the project. Depending on the ideological persuasion (in terms of scientific discipline), the data collectors may enthusiastically believe in a particular instrument or data gathering technique and be skeptical to the point of antagonism of another. Such attitudinal postures may well have a profound influence on the reliability and validity of the collected data. Sims and Baumann give the example of the skepticism encountered by a psychologist when he discussed the use of a TAT test with a seminar of graduate students were described as "smiling indulgently," "sneering scornfully," and wearing 'looks of impatient boredom." The students simply thought this test to be a circuitous route to find the obvious, and it offended their notion of the rational model of man. Clearly an individual so prejudiced toward a particular data gathering technique would be a poor choice to administer it. Thus the use of data gatherers from two or more disciplines poses real difficulty in terms of insuring that accurate and usable data is generated. Finally, Sims and Baumann list the fourth and final problem of research involving multiple disciplines. When the data have been collected and tabulated, the researchers may not be able to understand or account for some of the results because their own discipline makes them alien, as it were, to the explanatory or causal rationales of the other disciplines involved in the research. Thus the geographer may be able to make no sense of the TAT test results, and the psychologist cannot fathom the influence of culture and geography, and accordingly the differences revealed by the data tabulations simply appear as unexplainable anomolies to some of the research participants. Then even if all other problems throughout the research have been resolved, the final results cannot be properly integrated into a coherent analysis. If all of these difficulties are to be collectively coped with, these authors recommend that all the disciplines in the project be involved from the very beginning and enjoy shared power of decision. Furthermore, they underscore the need for "permanence of organizational structure" to insure "balanced contributions of the disciplines rather than trusting to ephemeral persuasion." Beyond this, they recommend that the data gatherers, whoever they may be, become familiar with the instruments used and be convinced of their relevancy and value. Finally, they emphasize the need for the research participants representing their disciplines in strength but with a "well-developed tolerance for imperfection," and "discipline humility."

In general, writers who have addressed the difficulties of multidisciplinary research have pointed to several major problem areas. First, they have singled out the fundamental difficulty of communication. Multi-discipline research may well require more effort than single-discipline research because of the problem of translation, as it were. Disciplines, in effect, are cultures with distincitve languages and symbols. Communicating across cultural and language boundaries is never easy. (If you doubt this, ask President Carter's former Polish interpreter.) Translation requires extra effort, and some researchers not infrequently tend to be a bit parsimonious in the expenditure of what they may regard as superfluous effort. Interdisciplinary research teams, so some critics contend, are not unlike the construction crew on the Tower of Babel, in that they speak and conceptualize in totally different scientific dialects and forms, thus preventing effective cooperation or even meaningful understanding. Even the several social and behavioral sciences, it is said, speak different tongues, often unintelligible to each other. There is considerable validity to such an assertion. Yet, may it not be the case that many researchers are actually conversant in the discourse of other disciplines, but like the inhospitable citizen of a foreign country who refuses to admit that he can speak English when in the presence of an American tourist, simply claims not to speak the other scientific language? It is difficult to imagine the product of American higher education, and especially graduate education, being unable to demonstrate even a modest grasp or understanding of other disciplines, and especially related disciplines.

It cannot be denied, however, that the cultural disparity of different disciplines go beyond mere language. Basic differences in perspective and conceptual capability are involved, and such differences can indeed handicap effective, empathetic communication. Yinger (1977; 3) has spoken cogently to this concern and has commented that:

> Virtually every topic explored by sociologists is of interest also to colleagues in one or more other disciplines. The sharing of interests is not always accompanied, however, by a sharing of vocabularies, assumptions, methods, data. Although diversity of perspectives can enrich research on a probelm, it can also create inconsistencies, leave gaps, and build barriers to the multidisciplinary work essential for full understanding.

I submit, however, that many related disciplines are more similar in their view of our world than they would care to admit. It may well be that the language differences of even disparate disciplines obscures a larger foundation of shared perspectives than is often believed to be the case. Exclusivity affords a better foundation for disciplinary ethnocentric self-superiority. To admit nonexclusivity is to erode this foundation. In regard to the similarity of perspectives of some related sets of disciplines, such as the social sciences. Francis Wilson (1950; 383) has observed:

> The artificial division of the social sciences, according to the traditional and budgetary behavior of of university administrators, has obscured an important fact. This fact is that contemporary American social scientists share very largely in a common metaphysics, that is, a common theory of knowledge, and a common idea of the nature of social reality. Behind the often labored terminology of a social science, there is yet the common sharing of a mutual system of metaphysics.

In any event, the sophisticated traveler who wishes to maximize the benefits of his travel accomplishes to acquire some minimal proficiency with languages he may encounter. In doing so, he avoids the label of "ugly American" and derives from his travel a richer and more meaningful experience. I would admonish the sophisticated researcher who wishes to maximize the benefits of his involvement in a multidisciplinary research project to acquire some minimal proficiency with the various scientific perspectives he may encounter. In doing so, he avoids the label of "ugly researcher" and derives from his research a more meaningful experience and a more productive involvement.

Another common difficulty inherent in multi-disciplinary research, according to some authorities, is the incongruity of goals. Accommodation, in the sense of compromising with the other disciplines involved in regard to the design and execution of the research, also takes effort. Few research enterprises can include the total desideratum of all the constituent disciplines involved in a project. In the interest of time, resources, and goal, the research project will call for sacrifices, as it were, on the part of the participants, in regard to what must be left out, what can be included, and what must be converted into a common denominator element of the project. Giving and taking is often exhausting, particularly giving. It is simply easier to speak one's own scientific language and to do things in the fashion of one's own discipline's cultural dictate rather than to be burdened with the need for research design accommodation. That different disciplines are interested in different problems or at least different dimensions of a problem is undeniable, but this exigency may be more virtue than vice. If multiple disciplines were constrained to always integrate or merge their goals in multi-disciplinary research, such research would indeed be handicapped, perhaps to the point of perpetual inertia. Granted there must be a common research purpose, a common direction of research activities, and a common and coordinated set of efforts to address some problem or phenomena.

Such assumptions do not, in my opinion, mandate a common and integrated goal. Dairy scientists and sociologists might, as an illustration, be mobilized as a multi-disciplinary team to explore possible declining dairy production in a given state. Each discipline might have several possible research goals, but these do not necessarily have to be common or integrated for the research efforts of each to be productive. The dairy scientists might, for example, determine from their research that the number of dairy farmers and the number of dairy farms and the number of dairy cattle was, in fact, decreasing slightly, but that thanks to improved breeding stock, enriched feeds and supplements, and more efficient dairying techniques (which they might explore in significant detail), milk production for the state was remaining level. The sociologists might determine that the declining number of dairy farms, farmers, and cattle was the result of disenchantment with dairy farming as a vocation on the part of rural youth, who were turning to other agricultural pursuits. The sociologist might further learn that a principal factor in the disenchantment of rural youth was the significantly increased cost of necessary equipment and machinery for more efficient dairy production. Finally they might also conclude that while some rural youth were abandoning their aspirations to pursue dairy farming as a vocation, those that did take up dairying were individuals of strong commitment both to the vocation as well as to the necessity of more efficient dairying techniques. Both disciplines would then, in effect find that no "problem" existed. (This illustration is, of course, an oversimplification of a multi-disciplinary research project.)

My point is that both disciplines might have cooperated in a productive manner, and jointly addressed the problem with a coordinated research effort. Their research goals would have been somewhat different, as would their research perspectives and methodologies. Nevertheless, their joint efforts may well have been beneficial to each discipline. The joint research project would have been an efficient and productive approach to the problem, and their findings may have shed light on two different dimensions of the problem. Different disciplines may cooperate in multi-disciplinary research in a near totally integrated fashion, or they may simply coordinate their relatively separate projects in an attempt to be more efficient and expeditious. Multi-disciplinary research may involve little more than simply "piggybacking," but even this minimally integrated approach may pay important research dividends. Many scientific researchers probably would not regard the concept of "piggybacking" as constituting true multi-disciplinary research, since it would likely not meet their criteria of research design integration. I would submit, however, that integration of research goals, designs, and methodologies would qualify, to a degree, as multi-disciplinary research.

A year or so ago, several members of my department decided to become involved in some research which would address health care needs and health care availability in a coal mining area of Southwestern Virginia. We subsequently learned, however, that another university in the state, sponsored by local medical practitioners, was about to field a research project to assess the state of respiratory health among coal miners in this same area. We were delighted to receive an invitation from the local medical practitioners in the area to combine our research efforts with their project. We could have, in effect, "piggybacked" the first phases of our study on the other study, utilizing their subjects, combining some aspects of inquiry that may have overlapped, and sharing data derived from a single instrument. Unfortunately, a devastating flood in the area necessitated a lengthy postponement of both sugjects. Multi-disciplinary may mean a cooperative and coordinated research effort without necessarily a total integration of methodologies and goals. The result of such an enterprise may well be both individually and collectively (in terms of discipline) rewarding.

Perhaps the most commonly mentioned difficulty of multi-disciplinary research, however, is the problem of inequity in terms of the power and authority relationship of the disciplines involved and the attendant deprivation of autonomy of the less influential discipline. This problem is endemic to the very organization of our total scientific enterprise and our institutions of higher learning. Multi-disciplinary research, of necessity, requires a sharing of prominence. Either one discipline is the "star" in the sense of the major thrust of the research, and the contents of the inquiry and the other disciplines are essentially "supporting actors," or else they are equal "co-stars" in the cast. In the instance of the former, the ethnocentric nature of all scientific disciplines limits the enthusiasm for playing "supporting" roles, and as for the later, "co-stars" have great difficulty in effecting an equitable division of labor and territoriality. Some multi-disciplinary research has floundered simply because of the researcher's disaffection for what they perceived as the pecking order of the disciplines involved in the enterprise. Scientists often have egos of heroic proportions and are understandably ego-involved with their respective disciplines. In this regard, they are also often as assertive and defensive about their disciplines as are the parents of Little Leaguers about their athletic progeny.

The existence of scientific specialization and sub-specialization cannot be denied or ignored, however. Where there are separate scientific disciplines represented in a research project, there is likely to be one discipline in a more commanding or influential position than another. A set of researchers from one of the natural sciences or engineering sciences, for example, may have actually sought and obtained funding for a proposal to study the feasibility of a particular dam project. They may have obtained the funding with the proviso from the funding agency, however, that they include a social component to assess the social impact of such a dam. In this instance, the natural science or engineering component of the research is the prominent or major component. The social science component is not unimportant or necessarily less important than the other. It is simply the minor or supporting component. Inasmuch as it is primarily a natural science or engineering study, clearly this discipline is going to play a very influential role in the overall planning of the research project. There is an axiom in the theatre, that there are no such things as small parts in a play, only small actors. The supporting actor may have a smaller part, but he also has the autonomy to play his role to perfection as his own persuasion dictates (within reasonable limits, as articulated by the director, and the play itself, of course). Having the minor component of a research project does not necessarily mean playing "second fiddle," as it were. Discipline autonomy and standards can be maintained and discipline goals can be attained. Whether major component or minor component, if the researchers from different disciplines who are involved in the project will demonstrate appropriate professional and scientific toleration, are committed to the overall success of the project, and are prepared to make concessions productive to the larger project, there should be no problem of pecking order. Where disparate disciplines embark on a research project where it is intended that they share prominence on an equal basis and in effect both (or more) all have major components of the research, it would be well to establish or explore the ground rules and effect a mutually satisfactory mechanism for resolving ideological and methodological conflicts, and effecting compromise before the project is actually taken up. If everyone goes into such an enterprise secure in the knowledge that they will have an equal contribution and input into the project, the possibilities of discensus are diminished.

Possible Areas for Multi-Disciplinary Research

In the final analysis, however, the success of multi-disciplinary research may well often depend on the topic or problem under study. Some topics or problem areas may, because of certain constituent properties or attendant circumstances, be more suitable or lend themselves more readily to multiple discipline enquiry, and especially research sponsored by agricultural experiment stations. In this connection, I would like to suggest four areas of possible research inquiry which I consider to be particularly relevant and pressing, and which also, in my opinion, are especially appropriate for joint inquiry by several disciplines. These include:

Manpower development has long been a high priority research concern in both urban and rural areas. Recently, however, in the face of a tight job market, a relatively high rate of unemployment, and the continued problem of unequal access to vocational opportunities experienced by some segments of the population, manpower development has become an encompasses critical and pressing concern in some areas. A number of government agencies and bureaus are currently sponsoring research addressing the broader parameters of manpower development, and numerous scientists from many disciplines are engaged in various kinds of research endeavors. Manpower development is an enormously broad and complex topic, and because of this, in effect, offers problems for everyone (in terms of different disciplines) to probe. Looked at in the most basic fashion, manpower development is the process of matching people to work in the most productive way and in a manner which is most satisfying to the people involved. Accordingly, manpower development encompasses a multitude of sub-processes, including the dissemination of information about jobs, building a vocational component into education, job training, vocational recruitment and selection, the enhancement of job opportunities, work careers, labor supply and demand, labor mobility, the impact of change on work, and skill upgrading, to name but a few. I am persuaded that there are many directions of manpower development that are particularly relevant to the rural context. In this connection, at my own university, we embarked several years ago on an ongoing research program which addressed career patterns, including recruitment and retention, of a series of rural environmentally related occupations (for an overview of this program see Bryant, Snizek, and Shoemaker, 1976). The occupations studied have included veterinarians, game wardens, forest rangers, and fish biologists. This year we are moving in a slightly different direction and are studying the career patterns of county health physicians. These studies have not involved multiple-disciplinary research, but they should have. We have carried on elaborate consultation with persons in each of the fields studied and with researchers in other disciplines, and such consultations have convinced us that our own efforts could have readily and profitable been supplemented by research collaboration from any of a number of other disciplines, including both natural and social sciences. Various disciplines could easily have found problems of interest to them, and I believe that the integration of goals and methodologies could have been readily accomplished. Even the very small aspect of manpower development that we have addressed, i.e., career patterns of rural occupations, still has enormous room for further research, and especially multi-disciplinary research. Given the diversity of topics that can be studies, the numerous perspectives that can be employed, and the pressing need to more effectively offer all of our citizens, rural and urban, the maximum opportunity and facilitation for actualizing their vocational potential, manpower development would seem to be a particularly opportune and productive area for multi-disciplinary research.

Energy has become a household word since the Arab oil embargo of several years ago. The embargo brought forceably home to most Americans the fact that our fuel resources are not finite, and that even political events can diminish the supply of fuel available to us. Energy in the future, regardless of its source, will be both scarce and expensive. We will accordingly be constrained to exercise more conservation in the utilization of energy and to also seek alternate sources of energy. Alternate sources of energy are not as easily developed as many might think. There are social, economic, and political problems to be confronted, as well as technological problems in such development. As we have seen, offshore oil development is not always compatible with the concerns of environmentalists and those who have recreational interests in the coastal areas. The presence of an endangered species of minnow in a river in one of the southern states effectively blocked (at least temporarily) the development of a much-needed hydro-electric dam on the river. Other dam projects have been halted because of pressure to include certain stretches of the rivers, on which the dams were to be built, in the Scenic River Program. An increase in deep coal mining activity may bring more mine accidents and deaths, and an increase in respiratory ailments such as "black lung disease." Strip mining holds less hazard for its miners but is offensive and opposed by those who fear for the future of the land and its vegetation. The building of atomic energy plants invariably triggers controversy. The problem of more energy is a complex one that veritably cries out for multi-disciplinary research and lends itself to joint efforts of inquiry in a manner seldom encountered in other research areas. A substantial segment of energy research may well be rural research or rural related, and would seem to be extremely relevant to the experiment station mission. The energy problem invites research by a wide range of disciplines, and effective solutions in this area are likely going to be obtained only through multi-disciplinary research activities.

Man/animal relationships, or rather animal oriented human behavior, as a generic area for inquiry, would seem to lend itself readily to both multiple disciplinary research, and the research priorities of most agricultural experiment stations. I am not suggesting here some new or esoteric research topic, but rather am simply providing a generic label for a wide range of behavioral phenomena that encompasses some areas of past inquiries and suggests some new directions for research. Man/animal relationships refer to the interface of human and animal behavior. Animals figure prominently in human leisure activities, for example. Examples might include hunting and horse racing, not to mention deviant forms of recreation such as cockfighting. Leisure activities are relevant concerns for research problems. (In my state the issue of thoroughbred horse racing and ontrack pari-mutual betting is the object of a major political conflict, and appropriate in-depth research on public feelings and concerns in this regard might well resolve the conflict.) As stated above, the existence of an endangered species of minnow in a Tennessee river and the public reaction to its extinction has prevented a major hydro-electric dam project. In some parts of the country, conservationists are engaged in a bitter battle with farmers and ranchers over the destruction or control of certain kinds of predators such as coyotes. Various federal and state laws concerning scarce and endangered animal species is having a considerable impact on our traditional views of wildlife. Some individuals are being arrested for possessing tiger skins, products made of crocodile hide, eagle feathers, and items produced from whale ivory. Recently a dead whale washed ashore on the East Coast, and curiosity seekers carried away bits of the whale, including teeth, only to discover that they were violating federal law. In our previously mentioned study of veterinarian students (Bryant and Snizek, 1975), we discovered that while vast amounts of money and resources are being devoted to veterinarian medical training ostensibly for large farm animals, in fact the majority of students in some veterinarian programs were inclined to take up a career treating small animals. Thus state educational resources may, in some instances, be used in a manner not originally intended. In a similar connection dogs (and cats) are becoming increasingly controversial in some areas because of the problems of fecal pollution, attacks on humans, and the societal cost of the maintenance of companion animals (dogs and cats consume as much food each day as a freight train 12 miles long can carry). There are new state and federal laws concerning the treatment and transportation of slaughter animals. This is having its impact on the livelihood of some individuals. The small slaughterhouses are sometimes being forced out of business because of strict health regulations. If we are to effectively utilize or employ animals in the myriad ways in which we do, it is incumbent on us that we are sensitive to various operant public priorities and the social import of arranging or rearranging these priorities. Research and especially multi-disciplinary research to explore these priorities and the social implications would seem to be indicated, timely, and productive.

Natural resources and their effective conservation and utilization continue to be a major concern in our society. They have perhaps, however, taken on new importance in recent years as a result of the energy shortage, the rapidly rising cost of products, the continuing problem of pollution, and the recognition that our natural resources are being depleted at an alarming rate. As in the instance of energy and certain animal problems, concern with natural resources often involves questions of public opinion, political considerations, social priorities, and conflicts of interest. Professional foresters tell us that certain forestry management techniques such as clear-cutting, in some instances, actually represents a means of increasing timber production and enhancing habitat for wildlife because of the subsequent newbrowse growth. Some environmentalists, however, take exception to such timbering techniques, claiming that it is an ecologically unsound practice and aesthetically offensive, and thus the battle is joined. Cities and municipalities cite the need to dump treated sewage or effluent into rivers and harbors because of lack of economic resources to build treatment plants, and claim that no health hazards exist. Similarly, cities and states undertake to develop offshore oil production and coastal industry in an effort to strengthen their economy. At the same time, commercial fishermen claim that a multi-million dollar seafood industry is being destroyed. There are no absolute answers to these dilimmas. Rather, their resolution lies in the ability to reconcile priorities. The problems of natural resources, like some of those I have previously discussed, are enormously complex, and there is a considerable urgency in their being addressed by researchers from multiple disciplines. Such problems often bring extremely diverse disciplines together to explore solutions. Once, I recall, a situation where a seafood technology scientist was working with a group of seafood processors in a coastal area trying to help them develop more efficient ways of shelling crabs, inasmuch as there was a very unstable labor force available for such work. A behavioral scientist pointed out that there were segments of the population that were perhaps not then members of the regular labor force that will be productively developed and trained for such work. The behavioral scientist suggested an effort to identify such persons, and develop the requisite skills, thus affording employment, to some not previously employed. For a variety of considerations, the project never got beyond the talk stage, but I was impressed that a problem of seafood technology at least prompted a relevant dialogue between a behavioral scientist and an industrial engineer, and could have led to a meaningful joint effort. The problems attendant to natural resources represent a fertile field for multiple-discipline research and a pressing area of concern in contemporary society. Surely, these problems could profit from the cross-fertilization and enhanced insights that the joint research efforts of several disciplines might provide.

Summary

Both single-disciplinary inquiry and multi-disciplinary obviously have their place in the research scheme of things, but many pressing issues of the day call for the three-dimensional examination that only joint research efforts of several disciplines can afford. Furthermore, there is an urgency to many of these issues that ill affords only paying lip-service to multi-disciplinary research. The advantages of multi-disciplinary research are numerous and well-evident. It has succeeded beyond expectations in many instances in the past. In other instances it has been somewhat less successful, although this was not always unanticipated. Inasmuch as multi-disciplinary research not infrequently attempts to combine or integrate perspectives, methodologies, and tools of analysis from disciplines of widely varying ideology, goals, and levels of abstraction, the task is often difficult, frustrating, and sometimes seemingly unproductive. The findings and results of multi-disciplinary research, inasmuch as they may result from a compromise methodology, are sometimes perceived as superficial and of modest import, and are accordingly disappointing. The many problems seemingly inherent in multi-disciplinary research are formidable, but perhaps exaggerated and not necessarily unavoidable.

Each discipline involved can learn and profit from the involvement of the other. Such a multiple endeavor is expeditious, and a judicious utilization of time, resources, and data. More importantly, there is research spillover, feedback, and reinforcement at every step of the research enterprise. Researchers in one discipline may well find insight and inspiration for their own contribution to the overall research design, from being privy to the variables employed by the other disciplines in the project and to the data which they seek. There is a strong cross-fertilization potential inherent in multi-disciplinary research, and the intellectual stimulation and reinforcement of several disciplines in one project may well find answers where a more bland single disciplinary inquiry would not.

The accelerating pace of technological and social change and the attendant exacerbating influence on many of our pressing societal problems mandate the most effective and expeditious research avenues to address these problems. Bennis (1973), in his perceptive comments on the organization of the future, has predicted that the tasks facing the organization of the future will be "far too complicated for one man to comprehend, not to say control; they will call for the collaboration of professionals in a project organization." He goes on to project that in order to solve these complex problems, organizations will become "adaptive, rapidly changing temporary systems" organized "around problems-to-be-solved," and made up of "relative groups of strangers representing a diverse set of professional skills." Articulating points or "linking pin" personnel will be necessary "who can speak the diverse languages of research and who can relay and mediate between various project groups." Finally, he predicts, "the groups will be conducted on organic rather than on mechanical lines; they will emerge and adapt to the problems, and leadership and influence will fall to those who seem most able to solve the problems rather than to programmed role expectation." Bennis' prognostications strike me as completely relevant to the research problems and tasks of today and skillfully articulate the necessary formula for effective and productive multi-disciplinary research efforts.

REFERENCES

Bennis, Warren G., "Organizational Developments and the Fate of Bureaucracy," in W. E. Scott & L. L. Cummings (eds.), Readings in Organizational Behavior and Human Performance. Homewood (Ill.): Irwin, 1973, pp. 327-338.

Bryant, Clifton D., William E. Snizek, and Donald J. Shoemaker, "Ecological Work and Careers: an Overview of a Research Program for the Sociological Study of Environmentally Related Occupational Specialties," Man-Environment Systems, Vol. 6, No. 2 (1976), pp. 107-119.

Sims, John H., and Duane D. Baumann, "Interdisciplinary, Cross-Cultural Research: Double Trouble," The Professional Geographer, Vol. XXVII, No. 2 (May, 1975), pp. 153-159.

Snizek, William E., and Clifton D. Bryant, "Intraoccupational Veterinary Specialties: Career Trends and Contingencies Among Students and Practitioners." Journal of Verterinary Medical Education, Vol. 2, No. 2 (Fall, 1975), pp. 36-43.

Walsh, W. Bruce, George L. Smith, and Manuel London, "Developing an Interface Between Engineering and the Social Sciences: an Interdisciplinary Team Approach to Solving Societal Problems." American Psychologist, Vol. 30, No. 11 (November, 1975), p. 1067.

Wilson, Francis G., "Discussion of Remarks by J. J. Spengler," (Spengler, J. J., "Generalists Versus Specialists in Social Science: an Economist's View"). The American Political Science Review, Vo. 44, No. 2 (1950), p. 383.

Yinger, J. Milton, "Theme: Sociology and Related Disciplines: Shared and Divergent Perspectives." The American Sociological Association 72nd Annual Meeting Program 1977. Washington (D.C.): The American Sociological Association, 1977, p. 3.

MULTIDISCIPLINARY RESEARCH: A HOME ECONOMIST'S PERSPECTIVE FOR ITS CONTRIBUTIONS TO UNIVERSITY RESEARCH AND PUBLIC SERVICE PROGRAMS

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Home Economics by definition is already an interdisciplinary or multidisciplinary field. Specialization gives depth to the overall field, while the profession is maintained through a common orientation and focus on certain functions. Even within some departments there exists a multidisciplinary faculty; and in all departments students are well trained in statistics, computer science, and research methodology.

With the diversity represented in a multidisciplinary focus, the key is to understand the orientation in which the focus is couched and then to concentrate on how to maximize the uniqueness of various team members. Because home economics has its own diversity toward a common orientation, the profession has the potential for thriving in a multidisciplinary setting. Therefore, as we are increasingly facing situations of "losing what we made respectable," we should opt for multidisciplinarity. For example, historically, the study of nutrition was rooted in home economics. Ellen S. Richards, the founder of the profession, began this focus at MIT around 1878. Now, it seems that "medicine" has just discovered nutrition! The allied health sciences are laying claim also! With such critical issues as human nutrition, for example, in the scene of world food hunger, the time is right for all these and other disciplines to join in concert--the goal is the same. With a holistic view, through a multidisciplinary systems approach, perhaps more could be accomplished at a faster pace, with greater efficiency. Nutrition cannot be separated from the system of a world food crisis; thus, many disciplines have to be involved. With this concern, among many others, it is my belief that multidisciplinary research through a systems approach is the only way to contribute to university research and public service programs.

Often times the definitions of inter- and multi-disciplinary research in the literature overlap or have interchangable meanings. For the purposes of this paper, multidisciplinary research is that which

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involves representatives of two or more disciplines at all stages of the research. It is also an assumption that the integration of theory, research, and application are necessary and natural parts of this endeavor.

In the remaining parts of this paper, I will sometimes be critical of my profession, and will play "devil's advocate" with the notions involved in multidisciplinarity. Some of my comments will appear naive on the surface, but I think they have depth. Hopefully, sections on future needs and expectations and a discussion of the potential for collaboration with Extension will temper my critiques, indicating the belief I have in the effectiveness of multidisciplinary research. For this effectiveness though, I believe in pre-preparation for the prevention of potential problem areas.

Preparation for Multidisciplinarity: Preventing Potential Problem Areas

A multidisciplinary team and the solution of a research problem is successful not only to the extent that it reaches its goals, but also the proficiency which operates within the process. It is important in the composition of the research team to pay less attention to the person's particular discipline and more to the "track record" already set. Include persons on the team with the needed skills--one with grantsmanship ability, for example, if "upgrading dollar value" is an important research goal. Also, a "generalist" may help "mellow" the group. Of course, the test is finding excellent persons to show excellence toward the multidisciplinary goals.

In the home economics profession, inclusion of the non-home economist may be a catalyst to better research development--"a person to shake-one-a bit." Interpreting a problem to those from several disciplines may enable individual professions to better explain their concerns and missions to outsiders. This may be our way of convincing others that we are attuned to today's needs.

Potential problem areas to multidisciplinary efforts may be precluded through acquisition of some skills and techniques which I believe are necessary prerequisites to effective endeavors.

Even with highly motivated and skilled individuals, hinderances in effective multidisciplinary efforts are likely to come, not from the quality and excellence of the people working together, but from their attitudes. Many think that lack of money is the prime deterent to well-functioning multidisciplinary programs. But it's the people more than the institutions and monetary resources. Attitudes counter to multidisciplinary research do exist, even if the existence is unrecognizable. Some people, not aware of the importance of concepts about interaction and communication skills, allow the "territorial imperatives" to negate the benefits of joint endeavors. A "give-and-take attitude" yields benefits to the interaction and provides success for multidisciplinary approaches. My observation has been that much successful multidisciplinary research is conducted by friends!

Skill Acquisition

For these reasons I propose that skill acquisition in several areas would vitally boost participation and facilitate the multidisciplinary mechanism. These areas include proficiency in aspects of human relations training such as interpersonal communication techniques, leadership development and group process, and creative problem solving; and in systems theory and research.

Interpersonal communication techniques. Training in interpersonal communication techniques is a valuable pre-requisite to multidisciplinary research teams. The common feature of the variant forms of research performed by various disciplines is the "application of several disciplines to a single problem; what differs from form to form are the organizational and interpersonal relations" (Mar, Newell & Saxberg, 1976). Pivotal relationships are most important yet we know the least about increasing the quality of person-to-person interaction. Thus, prior improvement in human relations skills to overcome intolerance, bigotry, and barriers, not only among individuals but within and among disciplines, would facilitate later profound scientific development.

Perhaps one reason for communication lags is the fact that we are poor listeners. We may do our own thing, our own discipline, in the multidisciplinary setting because we have inadequate perception responses--too many "in and out" periods in listening--which prevent us from hearing what members from other disciplines have to say. Listening, without being defensive and without constant comparison to our own knowledge base, enables us to learn from others and to do divergent thinking, perceiving problems from different perspectives. Too many of us are so encased in our insecurities about other disciplines that its no wonder we miss the points! Additionally, many of us are reluctant to speak up with our ideas, or we are bashful about asking for clarity when we don't understand. After all, a psychological principle is that humans act in such ways as to protect their self-images--so who can admit to peers that we are not as expert in their fields as they are?!

Leadership development and group process. Being skillful in leadership and applying good group work techniques is learned through study and practice. Surely, there are some "born" leaders, with a charisma that insures success; however, this is the exception to the rule.

Dimensions of effective leadership must be considered by all multidisciplinary team members: (1) concern for people, and (2) concern for production. Although these two dimensions are independent, optimal group functioning requires that leaders be concerned with both production and people to a high degree, with a focus on team building, interdependency, trust, and commitment to the organizational goals! The independent variables of task behavior (i.e., initiating structure--planning, organizing, and formal communication) and relationship behavior (i.e., consideration -- openness, trust, empathizing, warm and caring atmosphere) must become interdependent. This is not to say that there are right and wrong ways in effective leadership--such would clutter individuality. But it does mean that given the above, leadership effectiveness is accepting the situation as given and then shaping the environment from that point on.

Persons working on multidisciplinary teams, who possess leadership skills, or at least understand the process components, will be flexible (that word is situationally and behaviorally anchored--"a loaded word"!) and will have the maturity to be motivated to accomplish assignments, the willingness to be responsible, and the skill, experience, knowledge and expertise to work at high levels of efficiency. These points are appropriate for anyone--professor, kindergarten child, or chairman of the board--anywhere there are specific defined role expectations. No matter how competent, most people are more skillful and motivated in some things than in others; therefore, any division of labor should consider these individual characteristics.

Certain aspects of group dynamics inhibit effective problem-solving: (1) people get into win/lose confrontations and (2) individual differences are seldom used as assets--we pass up on expertise. Although evidence from research clearly indicates that no single, all-purpose leadership style exists, techniques can be learned that will allow successful leaders to adapt their behavior to meet the demands of their own unique environment. Learning how to give and receive feedback is worth noting, because it offers the possibility of learning something valuable about oneself which can serve as a basis for future improvements.

Understanding group process allows for growth in five areas (Center for Creative Leadership, 1975a):

(1) Sensitivity involves awareness of the environment,
empathy,
openness to new ideas,
flexibility, and
tact.

(2) Motivation includes group energy level
initiative, and
internal drive to achieve.

(3) Interpersonal Skills are listening,
warmth,
communication,
initial expression, and
teamwork.

(4) Leadership requires resourcefulness in problem solving,
motivating others,
organizational ability,
planning,
ability to evoke cooperation, and
decision-making skills.

(5) Emotional Stability means emotional control,
maturity, and
tolerance of uncertainty.

Surely, we all like to think that we possess these traits, and we do know the terms; but are they included in our behavioral repertoires and internalized to such a degree that we always include them in our personal and working relationships? Notice that the first letters of these five areas spell SMILE! Any research team needs a sense of humor!

Creative problem solving. Although some people may have a "knack" for effective problem-solving, this is not a generalized trait. Skill in problem-solving effectiveness can be learned for use in interpersonal and group situations. Generating functional creativity can be accomplished through training. Actually, there is a patented process, called Synectics, to aid learning in creative problem-solving. The Business Products Group, Xerox Corporation, developed it under the consultantship of George Prince (1970). Kimberly Clark used it to develop its Kleenex space-saver box. Sunoco used it in creating its dial-your-own octane system. And Ford had a Better Idea for its truck suspension because of it. The Velcro closure holding the head rest cover to your airplane seat was developed through this process when someone took a fantasy trip with a cocklebur!

This way of finding solutions to problems through creative team-work is not the traditional "brainstorming." Thinking in this framework is based on the assumption that most problems are not new. The challenge is to view the problem in a new way--to seek out new viewpoints by abandoning the usual constraints and examining all possibilities. Synectics provides researchers with more alternate solutions to evaluate and helps find the best possible solution to problems in the early phase of development.

This type of creative problem solving, Synectics, is sort of an artificial vacation because it seems to let the team take a holiday from the problem by not having to think about it for awhile. It encourages putting aside the "business-suit, intellectual" type of thinking--the usual tight, analytical frame of mind.

> Prince had developed two basic and interrelated approaches in the use of synectics: procedures that lead to imaginative speculation and disciplined group behavior so that speculation is not cut down, but valued and encouraged.
>
> "You must be careful not to kill a fresh thought," says Frank Wojciechowski, one of the value engineers who learned the technique. "It can be such a fragile thing."
>
> A scoff, a sneer or a seemingly off-handed remark, can kill an idea before it's born.
>
> A typical synectics session would go something like this. The leader of the team writes a brief general statement of the problem and the client, the person who knows the problem and all its details, describes it. Other members of the team join in with any suggestions or analogies that come to mind. Members of the group are encouraged to let their imagination "run wild."
>
> One session by a group of geologists and engineers for an oil company involved the discussion of the independent qualities of a cap in relation to a problem on how to determine oil saturation in reservoir rock.

The discussion of the cat, one of many that had taken place during this particular session, actually led to a solution to the problem.

The oil company's problem was how to get a core sample from thousands of feet down without having the sample lose its chemical quality by change in pressure and dilution by water.

Leader (hearing a remark made on how to calm an angry cat): "How can we calm oil down?"

Person: "Stroke it!"

Leader: OK, let's stroke it. What does it mean to stroke oil?"

Person: "You stroke it just like a cat and it calms down."

Client (amusingly): "Yeah...got to stroke it...stroke that oil."

Person: "Chill it...cool it down."

Leader: "If you want, we'll freeze it. Pump liquid nitrogen and freeze the hell out of that formation."

A workable solution was reached through the use of a "far out" analogy. (Center for Creative Leadership, 1975b) Techniques of synectics could be mastered by multidisciplinary teams because these teams rely on effective team work and creativity. It is encouraged that any discipline could use synectics--creative problem solving--to help solve their problems more effectively, regardless of their field of experience. I have used the creative problem solving process with families to help them see alternatives to concerns that previously had been painful for them to face.

Systems theory and research. Failure to approach problems from a holistic, comprehensive, problem-solving systems perspective accounts for much of our frustration--we have oversimplified and have been shortsighted and piecemeal in our efforts. The systems model offers a framework to problem solving applicable at various levels. It is both complex and rigorous, and very demanding and costly. Yet, on the other hand, "the systems approach is powerful and appears capable of systematically producing change" (Hayman, 1974, p. 501). Its qualities have been proven in applications in other fields (business, engineering, etc.), and it certainly has an important role in the future of multidisciplinary research. "The question is: Do we have the patience and fortitude to learn the theory in all of its ramifications and to develop the skills needed to apply the approach?" (Hayman, 1974, p. 501).

Armed with these aforementioned skills, what are future needs and expectations?

Future Needs and Expectations

Macbeth lamented: "Tomorrow, and tomorrow, and tomorrow,
Creeps in this petty pace from day to day ....

Not so! In 1970 Alvin Toffler introduced the concept of future shock and traumatized the citizens with his exploration of the rapidity of change and its effect on the human condition....

The October 1977 issue of The Futurist summarized a list of 41 long-term societal problems--"problems that could become major societal crises in the coming decades but are not very widely recognized at the present time." The majority of the problems have serious implications for the family and, therefore, should concern home economists.

Heed the most obvious:
- Persistent malnutrition despite affluence
- Malnutrition-induced mental deficiencies leading to social instability
- 'Invisible' famine
- Effects of stress on individuals and society
- Cultural exclusion of the aged
- Critical advances in biomedical technology, including access to life extension, genetic engineering, and euthanasis
- Institutional boundaries as impediments to societal problem-solving
- Growing conflict between central control and individual freedom
- Regulatory constraints and economic growth
- Loss of cultural diversity
- Potential for new urban violence
- Effects of technology on the individual psyche
- Social impact of changing roles of women
- Social implications of changing family forms
- Teenage alcoholism
- Social effects of redefining legal liability
- Lack of functional life skills in adults
- Decreasing utility of higher education
- Chronic unemployment
- Cumulative effects of polution
- Social response to energy disappointments
- Societal changes required to adapt to new energy sources.

Home Economists certainly have a role in assisting the constituents we serve to prepare for or to diminish the effects of these crises. Also, these would seem to be your concerns as you ask this question:

What are the universal competencies needed by individuals and families to cope with their environments--natural, social, economic, and technological--20 years hence?

> Futurist Carter Henderson has said, "People's problems are not disciplinary--they are interdisciplinary. Home economics is not disciplinary--it is interdisciplinary." Therein lies the obligation. Unlike Scarlett, we cannot retreat to Tara and think about that tomorrow (Green, 1978).

How can research meet tomorrow's needs? Looking at future needs in the "total society" is imperative. The current "information age" is baffling. Research has been done on an "ad hoc" basis. We have not had enough force. Is it because there wasn't a system for focusing on the nature of the research as it addressed national priorities? I think we did not have a holistic framework. We have not been firmly defensive with a multidisciplinary approach, putting together all areas of common societal concern.

Research with the social complexities of today commands the use of systems approaches to see the global picture. A systems approach may help eliminate concern for knowledge utilization. There has been an average of 19.2 years in the duration from the conception of a research area to utilization of the findings or products: the pacemaker conceived in 1928 was used in the 1960's; hybrid corn developed in 1908, prevalent in 1933--25 years; oral contraceptives tested in 1951, used in the 1960's; the videotape recorder developed in 1950, in use by 1956. It's heartwarming that we are using ideas faster, but still the average duration from conception to utilization is too long (Hopps, 1977).

Some future needs have been identified and the case for multidisciplinary systems research has been presented as an aid to knowledge utilization. How, then, does a profession decide what to do first? Identification and evaluation of priorities are essential.

Identification and Evaluation of Priorities

Periodically, each discipline in a multidisciplinary core needs to reidentify its professional focus, its role and mission in current problem-solving, and what its future research direction will be. In this way, each can contribute its uniqueness to multidisciplinarity. The profession of Home Economics, in cooperation with ARPAC (The Agricultural Research Planning Advisory Committee), CSRS (Cooperative State Research Service) and ARS (Agricultural Research Service) has been undergoing such an analysis. Ours has been through HERAPP--Home Economics Research Assessment Planning Projections. Research priorities have been identified and ideas for implementation are being generated. The criteria for generating these research priorities have been the questions that I believe any multidisciplinary team should ask:

1. How crucial is the need for solving the problem?
2. Does home economics have the expertise? (or in the case of a multidisciplinary team--Does the team have the expertise among its members?)
3. Will the solution produce benefit to society?

Identifying and evaluating some of the priorities can be accomplished with some of the numerous techniques available to scientists in pursuit of multidisciplinary goals. The Delphi (Tersine and Riggs, 1976) planning tool developed by the RAND Corporation is one such technique for long-range forecasting and planning which is a constant source of difficulty in many organizations. Because of the interrelated factors which must be considered in multidisciplinary problems of major magnitude, group decision making is a necessity. Delphi eliminates some of the more glaring difficulties of traditional methods, "particularly those associated with personality dominance and status of contributors" (Tersine & Riggs, 1976, p. 56).

The Delphi technique is a general methodology for achieving a concensus of opinion from a group concerning the impact of implications of some unknown or uncertain future event. Delphi is accomplished through the use of a series of intensive questionnaires interspersed with controlled opinion feedback. Increased accuracy regarding opinions of future occurrences is achieved by collecting the individual opinions of experts.

Since judgmental decisions are best facilitated by judgmental techniques. the Delphi is considered an effective approach to long-range predictions. Realizing that future survival depends on effective planning, such an approach is timely and appropriate for re-appraisal. "Goals are useful to be sure, but they shouldn't be viewed as end products. "Goals are useful only as they help us move from here toward somewhere else. Practically all goals tarnish with time if not renewed in some way" (Campbell, 1974).

Any steps toward re-identification and priority-setting require rigorous group work. Group process has to occur before any team can work together to get to the "root" of the problem. Home Economics has only just begun. Those professionals associated with research programs recently have recognized that home economics must achieve more than it has in the past. Preliminary results from the Home Economics Research Assessment Planning Projections study suggest that our researchers are not achieving their potential. It is hoped that the HERAPP study, accomplished through a modified Delphi technique, "will provide sound assessment of current activity and set reasonable but challenging goals for the future" (Ritchey, 1978). However, all this study and priority setting may have little value unless the entire profession provides more active support.

Multidisciplinary approaches can be beneficial to university research if the administrative organizational structures of the universities re-identify priorities. These systems may need to broaden their definitions and eliminate the dilemmas created by the age-old "teaching and/or research question. Unfortunately, we have polarized these--good teachers, and vice versa; but all faculty do not have to be both; and they should not have to meet that expectation. The dichotomy may not be appropriate in all situations. Educators talk about individual differences and unique contributions; and then they evaluate all contributors by the same criteria. With broader definitions and a focus on the impact of the product, and not so much focus on making the details in the process uniform, creative and documented service may also be accepted as valuable research.

Research in the future *is* the future. To insure this future, there must be an overall system--and multidisciplinary avenues are the only ways to deal with future needs. The era of ad hoc research is over if we are to have an impact. The "random intervention" and "tinkerers" era is gone! However, to complete the holistic research system, the influences must be globally viewed through political linkages, because increasingly it is expected that home economics will develop force in the human science arenas of common concern. Our greatest, most integrated impact will be in the areas that help individuals and families develop competencies for coping with their environments; and these areas may very well involve public service programs.

Impact on Public Service Programs

In order to have an impact, there must have been an interaction. Before results from multidisciplinary approaches can have full impact on public service programs, researchers must have public policy involvement. An interactive system will form the basis for generating research and impacting findings for the ultimate consumer. The huge policy arena may overwhelm us, unless a "new generation" of professionals, knowledgeable about legislative activities and willing to participate in public policy, exercises selectivity so that efforts remain manageable rather than becoming global and unidentifiable beyond interpretation into public service benefits.

A beginning level of involvement is to participate in implementation of legislation or public policy already developed--react or influence what is already in progress through testifying at Congressional Hearings, securing influential sponsors, and later following through by generating legislation involving home economics and other related disciplines. Home economists are seeking to include application and representation on policy and advisory boards where appropriate.

"There must be a planned way for universities to work with states and federal programs in developing public policy" (AAHE, 1977). Such activities might include planned efforts to form coalitions with professional organizations, industrial groups and large organizations with common or shared goals in public policy.

> Improved support for individual components of the profession helps the entire profession. We err when we try to get every area into a single bill. If there is potential for support for one area, all other areas of the profession should endorse it.
>
> Home economists have tended to avoid specific legislation for fear of "leaving out something." For example, groups within the profession struggled to get support for the Family Research Act of 1975 and failed because many persons asked, "What's in it for me or my institution or my company?" Most failed to ask, "What's in it for the profession?"

> This bill originally focused on funding research through the land-grant system, but efforts were made to add extension, instruction, all home economics programs, and other components. As a result, the legislation became diffuse, sponsors lost interest, and home economists seemed confused. (Ritchey, 1978)

Also, much of home economics-oriented research is being done by other disciplines, mainly because we have not competed successfully for available funds and perservered long enough to reap success.

Opportunities for Collaboration with Extension

The service and helping professions have a mission--to help others; and the impact of these missions must have an interactive component. For those involved with Agricultural Experiment Station research this interaction begins with the familiar research, teaching, and service trilogy and the Extension Service. Persons engaged in activities of any combination of these three have opportunities for collaboration with many agencies and organizations outside the academic setting. Applied research is "recognizable"--the impact is seen in society. This provides motivational feedback for the researcher as well as keeping the researcher in touch with the "real" world.

When working with the Extension Service the same areas of concern apply as with the process of initially generating the research endeavors. The interaction should be people-oriented, focusing on the questions wanted answered rather than going back to the basics and forgetting the needs and questions of the ultimate consumer. Problems, then, should be well articulated. The programatic focus, which Extension has, allows chance for this type of interaction: the program needs yield questions to research, and research finds solutions. In a circular way the findings are then applied to Extension programs. All this, of course, can happen if the ultimate goal is a focus on how the research can make a difference--a sense of how the data will be used.

This collective experience, so necessary to multidisciplinary efforts, is important in planning the interactive functions. Cooperation in research efforts is mutually beneficial. The researchers need the problems and Extension personnel need the solutions; because after being faced with day-to-day problems they are keenly aware of needs. The application of research findings is a legitimate and necessary component of knowledge. If the research process stops with the collection of findings, a necessary step is thereby separated from the process, and the potential for a vital component is lost.

Three examples from North Carolina in collective multidisciplinary experiences will be briefly described. Cooperative efforts among members of the North Carolina Agricultural Extension Service, Cultural Arts Committee of the Extension Homemakers, North Carolina libraries, State Staff of the public school system, and the School of Home Economics of UNC-G officially launched a statewide program, the "Lap Reader Project."

This project is designed to provide an enriched home environment for pre-school children. It is an avenue through which trained volunteers can help cope with the problem of a low literacy rate in North Carolina by exposing children to books, music and other positive learning experiences. The object is not to teach pre-school children to read, but to help parents (and others who take care of children) learn how to provide a caring environment filled with growth opportunities. Extension home economists, Homemaker club members, and other multidisciplinary specialists are united in this parent education and public awareness effort. It took a "system" to get this project planned, developed, and implemented.

Major resource materials were developed (including a 10-minute film, "Reading is the Family"), and training sessions were held in most counties in North Carolina. Booklets and "toys-to-teach" have been made and donated to day care centers, churches and kindergartens. Volunteers use these materials in visits to children's homes....Neighborhoods are borrowing children "instead of cups of sugar" (Melchild, 1977).

Research in marriage and family enrichment has been conducted by a team of representatives from sociology, psychology, theology, home economics, and family therapy. These efforts resulted in a position paper describing statewide programs, research in the field, and a proposal that this area of study is a "distinctive and burgeoning third applied area in the family field" (Smith, Scott, and Shoffner, 1976).

A liaison committee with the North Carolina Agricultural Extension Service and the Agricultural Extension Service research faculty of the School of Home Economics is actively functioning to provide interaction regarding planning, to implement research, and to utilize research findings.

Summary

Future research environments will depend upon today's decisions. Are we, in each of our disciplines, willing to give up some of our traditional ways? I would not ask that we give up our expectations, our values, and our goals; but I would ask a willingness and a concerted effort toward changing our ways--perhaps adopting new methods through creative perspectives. If multidisciplinary research is the most effective approach to solving the critical problems facing our society, why not require our doctoral students to participate in multidisciplinary dissertation projects? "Oh, but how would they divide a dissertation and how would we know individual effectiveness and worth?", one asks. We would know it through the worth of the problems solved and the students' future successes. And is there anything sacred about a volume of double-spaced typed pages, printed on 100 percent rag bond, collecting dust in our ivory towers?! Surely, students would be further along the path to successful future ventures, if some experience had been gained in the multidisciplinary process eventually expected of them as university academicians, public servants, or as contributing citizens. In the western region of the U.S., several schools are cooperating in an inter-regional doctoral program in an effort to provide diversity in educational experiences with a multidisciplinary focus. This requires administrative planning and monetary reciprocal agreements, but the payoff in opportunity far exceeds this minutia.

My proposal to include new approaches in the preparation of researchers is not meant to exclude the nurturance of scholarship, for knowledge is to be honored, it is to be used to solve human problems. Neither do I intend to give up the "generation of excitement" about individual research, nor the development of the persistance necessary for competing successfully, whether it be for funding sources or for advancement within one's discipline. Multiple discipline problems can offer highly creative stages to the researchers if all the "degrees of freedom" are not used for political forces--administration, fighting the bureaucracy, seeking funds, etc. My proposal is simply to do some goal analysis as it relates to multidisciplinary research, "mix" the disciplines tailored to how the problem is viewed, and to think creatively after we have armed ourselves with particular skills and techniques in interpersonal communications, group process, leadership, creative problem solving, research design, systems theory and practice, statistics, and computer science. If you want something to happen, make space for it. Make space for multidisciplinary research.

References

AAHE--Association of Administrators of Home Economics. "Public policy involvement." Presentation at the annual meeting, St. Louis, MO, 1977.

Campbell, David. *If you don't know where you're going, you'll probably end up somewhere else*. Niles, Ill.: Argus Communications, 1974.

Center for Creative Leadership. *Smile*. Smith-Richardson Foundation, Greensboro, NC 1975a.

Center for Creative Leadership. It's spelled S-Y-N-E-C-T-I-C-S and it can mean success. Smith-Richardson Foundation, Greensboro, NC 1975b. Reprinted by permission from the BPG News, Xerox Corporation Business Products Group.

Green, Kinsey B. Consider: 22 future societal problems that will affect families. *Action* (American Home Economics Association), Vol. IV, 6, Feb., 1978.

Hayman, John L., Jr. The systems approach and education. *The Educational Forum*, May, 1974, 493-501.

Hopps, J. How can reach meet tomorrow's needs? Presentation at the annual meeting of the Association of Administrators of Home Economics, St. Louis, MO, 1977.

Mar, Brian W; Newell, William T., and Saxberg, Borje O. Interdisciplinary research in the university setting. *Environmental Science and Technology*, Vol. 10, 7, July, 1976, 650-653.

Melchild, JoAn. A brighter future for pre-schoolers. *The Homemaker of the National Extension Homemakers Council*, Vol. 1, 3, Fall, 1977, p. 6-7.

Prince, George M. *The practice of creativity--A manual for dynamic group problem solving*. New York: Harper and Row, Publishers, 1970.

Ritchey, S. J. Viewpoint--what we can do to support home economics research. *Action* (American Home Economics Association), Vol. IV, 6, Feb., 1978.

Smith, R. M.; Scott, J. P. and Shoffner, S. M. *Marriage and family enrichment: A position paper*. (monograph No. 1, School of Home Economics, UNC-G). Greensboro, NC: Home Economics Center for Research, 1976.

Tersine, Richard J. and Riggs, Walter E. The Delphi technique: A long-range planning tool. *Business Horizons*, April, 1976, p. 51-56.

MULTI-DISCIPLINARY RESEARCH: AN ECONOMIST'S PERSPECTIVE

by

Luther Tweeten*

To avoid confusion, I begin by defining several terms as used in this paper. A discipline encompasses a body of knowledge including theory, institutional configuration and application in areas such as economics, sociology, statistics or mathematics. Multi-disciplinary research refers to representatives of two or more disciplines involved at all stages of the research process including design, conduct, data processing, analysis and interpretation. Interdisciplinary research refers to one professional performing research encompassing two or more disciplines. Cross-disciplinary research refers to one professional performing research in other than his primary discipline.

Interdisciplinary research now is the rule, not the exception. The newest generation of economists is well trained in mathematics and statistics as well as economics. In addition, agricultural economists have considerable background in agricultural disciplines such as agronomy and animal science. The research problems which economists address, however, do not confine themselves to these disciplines. Research on relevant problems also entails disciplines of psychology, sociology, political science, history, demography, geography and philosophy.

Decades if not centuries have passed since any scholar attempted to master all existing knowledge. To confine a degree program to manageable time dimensions in the face of an essential, expanding body of disciplinary knowledge, social scientists' graduate training must become ever more specialized while the research problems faced are becoming ever more generalized across several disciplines. The result is increasingly irrelevant research which, to pass demanding scrutiny by disciplinary reviewers of disciplinary journals, must omit essential elements from other disciplines necessary to address relevant problems.

Like the family doctor, the social science generalist is an endangered species in this age of specialization. Yet, departments of social science formed to respond to broad problems needing attention have not been notably successful--the training has been shallow and a demand for their graduates has not materialized. Because the argument for excellence from rigourous specialization cannot be dismissed, while social science problems demand an increasing range of disciplinary excellence for solutions, multi-disciplinary research seems essential. Yet, in social sciences, multi-disciplinary research has fallen short of it promise.

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IMPEDIEMNTS TO MULTI-DISCIPLINARY RESEARCH

It has been my good fortune to work in several multi-disciplinary environments. I spent a year at the Food Research Institute at Stanford Univeristy, another year at the Institute for Research on Poverty at the University of Wisconsin (Madison) and in addition served in two departmentsthat included sociologists and economists. Experience in these settings as well as observation of other multi-disciplinary settings indicates that researchers from two or more disciplines will sometimes coordinate efforts in some phases (usually design and conduct) of research but rarely in all phases. Even in multi-disciplinary settings, sociologists tend to do their thing; economists their thing. Out of frustration, my response has been to become interdisciplinary and occasionally cross-disciplinary. But obtaining sufficient background in fields other than economics to inject their contributions into issues of rural poverty, world food problems, etc., is no easy task. Multi-disciplinary research is the preferred approach if it can be made to work.

The failures of multi-disciplinary research trace in part to inadequate institutional administrative structures. Even where appropriate insitutional structures have been present, problems of communication have been overwhelming.

Institutional Structure

Our institutions are not well organized for multi-disciplinary research. Most social scientists are in departments of economics, sociology, etc. Multi-disciplinary work seems to function well only with monetary incentives for collaboration. Since monies are allocated largely within departments by heads and within colleges by deans, opportunities for multi-disciplinary work across colleges are limited. Economists may be within the college of agriculture (or business) and sociologists within the college of arts and sciences (or behavioral sciences). Funding may be more dispersed with sources divided among grants, the agricultural experiment station and others. Few funding organizations insist on multi-disciplinary research. Johnson (1971, p. 737) has observed that, "When the multi-disciplinary demands of a problem or issue cross college or divisional lines, administrative support will be needed by someone more powerful than the competing deans or division heads involved. In the university, this means the president's office or someone working out of the president's office."

Johnson goes on to make recommendations that research personnel from various disciplines push for administrative action to organize multi-disciplinary teams to tackle current problems and issues, and recognize that assignment to such teams must be no longer than required to make one's contribution to the solution to the problem or issue. He is particularly wary of establishing multi-disciplinary institutes or centers which may arise in response to a real need to research a problem. These institutes or centers become personal empires which continue to exist after the problem has been researched but fail to contribute to continuing disciplinary excellence or to respond to emerging real problems and issues. He suggests that several associations (e.g., sociology, psychology, economics) cooperate to provide professional awards for "distinguished public administration of multi-disciplinary issue-oriented, problem solving agrarian programs." Because professional awards are for the most part for disciplinary or interdisciplinary research, it also appears necessary to change the criteria for professional awards to recognize multi-disciplinary research.

Communication

If a species is separated, it eventually evolves into separate species unable to interbreed. Separation of social sciences into disciplines may eventually remove all chances of successful interface. Failure to communicate explains lack of success for multi-disciplinary research in favorable institutional settings. I participated some months ago on a small committee of economists and sociologiest sponsored by the National Academy of Sciences to write a research proposal in rural development. The first issue was how to define "rural development." While almost apologizing for offering a platitude, I suggested that we define rural development as an increase in well-being of rural people. A rural sociologist quickly retorted "I couldn't disagree with you more! Rural development is defined as a class struggle!" Another rural sociologist disagreed, saying that in his years of close observation of rural residents of eastern Kentucky no resident had shown that he perceived the low-income problem as a class struggle. Our committee was not communicating and we did not receive funding for the weak proposal submitted. The result of communication problems is a withdrawal to disciplinary research even within a multi-disciplinary setting.

In a recent article, Stanfield and Hefferman (1977, p. 57) write "Good theorizing requires integrating knowledge on topics that ordinarily are considered separately--as economics, political or psychological. The expertise of these matters is divided among economists, agricultural economists, and a few other groups of academicians and practitioners, who too often fail to read each others' literature" (emphasis mine).

If lack of communication is the result of past lack of interaction among disciplines, continuing the old, separate ways will not help. In my judgment the key to good multi-disciplinary research lies in prior interdisciplinary understanding. I use the word "understanding" because neither formal training nor research in fields outside ones own discipline is required. What is required is a sense of capabilities and thinking going on in disciplines other than ones own. Each disciplinary paradigm must be challenged by others in workships, seminars and other interactions. Initially, such interactions are likely to be acrimonious as disparate paridigms are compared. But such interactions are imperative if administrators and researchers are to become sufficiently conversant with other disciplines to know what and when these contribute to the solution of a puzzle.

SUGGESTED AREAS FOR MULTI-DISCIPLINARY RESEARCH

Turning to several suggested areas of potential multi-disciplinary research, I am constrained in thinking by my background, and apologize for any display of economic chauvinism. I realize I am asking sociologists and psychologists to help with some problems economists have long puzzled over. Most of the list requires measures of attitudes either as ends (well-being, perceived quality of life, etc.) or as means to change attitudes where these stand as obstacles to improving satisfactions in society.

Attitudes Conducive to Socio-Economic Progress

Economists are deeply indebted to sociologists (see Sewell and Hauser, 1975; Jencks et. al., 1972) for understanding of these determinants of personal economic performance. In one sense, these studies raise more questions than they answer because they emphasize the overriding importance of socio-economic background and random elements in determining performance of the individual. What explains the socio-economic background and random elements? Economists tend to be economic determinists, of course, viewing economic progress as a function of the economic costs and rewards facing decision makers. They have given attention to institutions, particularly government, because these influence economic incentives through intervention in the socio-economic environment.

I have stressed three ingredients of economic progress: natural resources, institutions and attitudes. Comparatively few economists have recognized the latter ingredient, although it is probably the most important of all. Nations with similar natural resource endowments and institutions have widely different rates of savings, investment and economic growth. Among, as well as within, countries, the labor force differs in industriousness. Furthermore, it has been argued that people receive the kind of institutions they ask for or deserve--hence, attitudes influence institutions.

Despite the importance of attitudes to economic progress, knowledge of what attitudes are conducive to economic progress and how attitudes inimical to economic progress can be changed in less developed regions of the U.S. or developing countries remains largely a mystery to social scientists. (Man does not live by "bread" (economic progress) alone, but few people go on to self-realization and personal fulfillment without first having "bread.") David McClelland (1961), a psychologist, has made impressive contributions but he stands out largely because he is so alone. Much room remains for additional contributions in a multi-disciplinary setting where the ideas of psychologists, sociologists and economists can be hammered out on the anvil of each others constructive critique.

The Contribution of Socio-economic Progress to Well-Being

Most economic theory rests on the presumption that the ultimate objective of behavior is to increase human satisfaction, well-being, quality of life or utility. But the analytical tools economists have developed are not well suited to find ways to increase human satisfaction; we instead increase what we can measure--income. Since sociologists have led the critique of such effort, I hardly need to add to the criticism. With help from other social scientists, we can use our tools to increase well-being and not just income.

I have attempted some incremental improvements. A number of social-psychological scales measuring various dimensions of personal well-being or quality of life were included in the Rural Income Maintenance Experiment conducted by the Institute for Research on Poverty in the states of Iowa and North Carolina for three years beginning in 1970. Wilmer Harper and I (1977) related age, education, income and several other variables to an index of well-being made up of several scale components. Income accounted for a minority of the variance in the index of well-being, but the coefficients of the income variables were statistically very significant. The results, if confirmed by additional research in other settings, provide profound implications for the distribution of income. Well-being from income increased at a decreasing rate to approximately $40,000 per year per household, then increased no longer. The best fitting mathematical relationship indicated a straight-line marginal response of well-being to income, declining to zero at $40,000 of annual income per average household. (This income was outside the range of data, hence, the estimated point of zero marginal utility should not be taken very seriously).

On the average, an additional dollar received by a household with $5,000 of income (1970 dollars) brings twice the satisfaction of an additional dollar received by a household with $22,500 of income. Some may oppose on ethical grounds such income redistribution (requiring sacrifice, however small, by some to raise satisfactions, however large, for others). Hence, the implications for income distribution through efficiency gains are of special importance. In the case of income redistribution the size of the "pie" is given and the issue is how to divide it. Any redistribution means there will be some losers as well as gainers. In the case of distribution of income, the size of the "pie" is expanded by economic growth and efficiency--the issue is how to distribute gains from growth. There need not necessarily be any losers. To illustrate, a resource investment project with conventionally derived benefit-cost ratio of 4.0 providing benefits to households with annual incomes of $22,500 would contribute no more to satisfactions than a similar size resource investment project with a benefit-cost ratio of 2.0 providing benefits to households with annual incomes of $5,000.

Some social scientists might be tempted to recommend redistribution of income if the above relationship between income and satisfaction is judged valid. However, economists caution about the cost of redistribution. Redistributing income from the rich to the poor can reduce aggregate labor input, capital input and national output through lowered savings, investments and efficiency brought about by changing incentives. It is possible that dissatisfaction from reduction in the economic "pie" offsets the satisfaction gained from more equal distribution of the economic"pie". Although on face value, the foregoing linear incremental well-being function argues for egalitarianism, a consideration of the economic cost of such redistribution suggests that, for welfare maximization in society, the distribution of income be less than equal but more equal than is the case currently in our society (Tweeten and Walker, 1977). Continuing multi-disciplinary work on this subject is very important.

This nation now publishes a social indicator's report, a welcome addition to the plethora of economic indicators. Still we place undue emphasis on the real Gross National Product (GNP) to measure overall progress of the nation. The GNP is highly unreliable as a measure of well-being because it examines only the level and not the distribution of income, double-counts income and presumes that dollars are directly proportional to well-being. Why not explore the possibility for an annual, national survey of well-being based on scientific sampling techniques and well tested attitudinal scales relating to how individuals feel about their quality of life. The survey, which should contain enough detail and respondents to isolate pockets of discontent, could be responded to by public policies with as much vigor and respect as unemployment and GNP are now accorded.

Rural Development

Economists and sociologists have contributed much to knowledge in the field of rural development. Unfortunately, the contributions of the disciplines are being fragmented into two "schools". One school closely identified with sociologists holds that community development is a process whereby means are used to reach development goals. Perceiving development as a process leads to emphasis by the development specialist on helping the community identify leaders, organize committees and ascertain goals. With formation of committees and identification of community leaders and goals, the development specialist leaves town. The "process" philosophy has been accepted widely, in part because it fit with federal rural development programs emphasizing local self-help, with a minimum of outside expertise and financial assistance to save Federal funds.

But the philosophy began to unravel. Development committees began to fall apart when members became frustrated over lack of accomplishments. Particularly in depressed rural communities, it became clear that outside expertise and financial resources were needed to accompany the first step, organizing the community, with steps of planning and implementation phases, assistance of planners and economists is useful. Thus, rural development is inherently a multi-disciplinary activity, requiring for success the contributions of several disciplines.

Other

Economists have difficulty dealing with environmental problems in no small part because the price mechanism does not give very clear or accurate signals of costs and benefits of protecting the environment. Other social scientists have worked much more than have economists with non-price measures of costs and benefits and can provide useful insights.

Nonprice elements are present in several community services. Ascriptive dimensions of schooling are an example. Do small schools promote better attitudes toward citizenship, personal adjustment, etc., than large schools? Sociologists have worked with such issues but their efforts have not been combined with those of economists to arrive at a more nearly optimal size and locational pattern for schools.

Many of these same issues arise for the small farm, now receiving substantial attention from Washington. Economists have provided rather overwhelming evidence of economies of size in farming and society seems to be willing to subsidize small farms to a considerable degree to have more of them around. What are the ascriptive advantages of small farms, do they really produce "better" people than nonfarm residence? Or does the public romanticize the small farm with a socio-economic image at considerable variance with reality?

These by no means exhaust the opportunities for multi-disciplinary research. The list seems long enough to demonstrate the need for cooperation among disciplines to research problems that do not fall within the paradigm of any one discipline.

SUMMARY AND CONCLUSIONS

If component disciplines of the social sciences require ever greater specialization while problems require ever greater generalization among disciplines, a good case is made for multi-disciplinary research. But multi-disciplinary research has not fulfilled its promise. How many research publications have you read that have been co-authored by an economist and a sociologist? Without greater interaction among social scientists, component disciplines will become so far apart that communication among them will become all but impossible. I submit that institutional changes and greater interdisciplinary activity are the precursors of successful multi-disciplinary research. The list herein of possible areas for multi-disciplinary research ranges from small farms to national development.

REFERENCES

Harper, Wilmer and Luther Tweeten. December 1977. "Socio-Psychological Meaures of Rural Quality of Life: A Proxy for Measuring the Marginal Utility of Income." American Journal of Agricultural Economics. 59(5):(forthcoming).

Jencks, Christopher. 1972. Inequality. New York: Basic Books, Ince.

Johnson, Glenn. December 1971. "The Quest for Relevance in Agricultural Economics." American Journal of Agricultural Economics. 53(5):728-39.

McClelland, David. 1961. The Achieving Society. Princeton, N. J.: Van Nostrand.

Sewell, William and Robert Hauser. 1975. Education, Occupation and Earnings. New York: Academic Press.

Stanfield, Gary and William Heffernan. Fall 1977. "Critique of Theorizing in Studies of Manufacturing Expansion in Rural Areas." Journal of Community Development Society. 8(2):40-50.

Tweeten, Luther and Neal Walker. 1977. "Economic Cost of Poverty." Chapter 4 in Robert Coppedge and Carlton Davis, editors, Rural Poverty and the Policy Crisis. Ames: Iowa State University Press.

Section B

OCCUPATIONAL PRESTIGE

"A Prestige Scale for Agricultural Occupations." Arthur G. Cosby and Lianne M. Frank, Texas A&M University.

"An Examination of the Relationships Between Certain Educational Variables and the Occupational Expectation Expressed by College Students of Agriculture." Lawrence W. Drabick and Rhett Humphries, North Carolina State University.

A PRESTIGE SCALE FOR AGRICULTURAL OCCUPATIONS*

by

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ABSTRACT

The development of a prestige scale for 50 agricultural and agriculturally related occupations is reported. The scale was constructed utilizing data from a mailed-questionnaire survey conducted during the spring semester of 1977 at 14 universities in the southern region of the United States. A 15 percent random sample of undergraduate majors in agriculture at these schools were contacted, and 2,392 students (74 percent) participated in the study. Questionnaire items and scaling techniques closely parallel those used in the National Opinion Research Center study (North-Hatt Scale). A copy of the prestige scale for agricultural occupations, the scale value for each occupation, and an index of agreement for each occupation are reported along with an analysis of several factors which may explain differences in the perception of prestige.

It has become widely recognized that American agriculture is becoming increasingly important for both our society and for the international food supply. As such, American agriculture appears as one of the major forces shaping life for the remainder of this century. Colleges of agriculture and land-grant institutions, as critical centers for the development of agricultural technology and expertise, will play a substantial role in determining the future. Since the mid-1960's, the enrollment of these institutions has been expanding at a rapid rate; this growth has been accompanied by some fundamental changes in the composition and function of the colleges. The agriculture student body is no longer composed primarily of farm boys, but has expanded to include substantial numbers of urban students and, more recently, women. At the curriculum level, the colleges now offer a variety of nontraditional majors and courses that extend the realm of agricultural training far beyond production and marketing.

Colleges of agriculture, of course, constitute the major institutions that produce professionals in agriculture. It is at this point that the question of the relative grading of agricultural occupations in terms of prestige can be introduced. Modern agricultural occupations span a wide range of specialties--occupations that can be differentiated potentially along a number of dimensions including the one at hand, the prestige hierarchy. As our society has moved from ascription to achievement, a person's occupation has grown to considerable importance (Gross, 1959), and studies which deal with occupational prestige have proliferated. However, little attention has been paid to the agricultural occupations. It is the object of this manuscript, then, to report in a descriptive vein the initial development of a prestige scale for a set of 50 agricultural and agriculturally-related occupations. The goal of this research is to construct a scale for those fifty occupations that is comparable to the North-Hatt prestige scale for general occupations developed in the 1947 National Opinion Research Center study (Reiss, 1961).

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North-Hatt scaling procedures were applied to data obtained from a sample of southern undergraduate college students who were majoring in agricultural subjects. In addition, social origin indicators such as farm background, socioeconomic status, and sex, were investigated as possible sources of variation in the perception of prestige.

Development of Prestige Scales

Few social science endeavors have received such sustained research attention as has the measurement of occupational prestige. This approach to social stratification emphasizes the importance of the vertical strata in society and assumes that the prestige of occupations in modern industrial societies provides a meaningful and reliable method of differentiating along that dimension. In the United States, the empirical scaling of occupational prestige can be traced to a number of early studies, including those by Counts (1925), Anderson (1927-28), Wilkinson (1929), and Smith (1943). In 1947, Cecil C. North and Paul K. Hatt, in collaboration with the National Opinion Research Center, conducted a national survey that sought to evaluate the social standing of a large group of occupations (Reiss, 1961). This extremely influential study forms the centerpiece in the literature on prestige scales and is the major point of reference for practically all prestige scales that have followed.

The North-Hatt method was based upon the subjective perceptions of respondents regarding their evaluations of a number of occupations. Respondents were asked how they would judge each occupation and were presented a rating card that ranged in the order of Excellent standing, Good standing, Average standing, Somewhat below average standing, Poor standing, and I don't know (Reiss, 1961: 19). Ninety occupations were used in the development of the scale. As has been pointed out, this set of occupations is not generally regarded to be representative of the American occupational structure, despite the efforts of North and Hatt to make it just that. The list seems to suffer from three main problems: (1) it contains a high proportion of professional occupations; (2) many of the occupations are scientific or governmental in nature; and (3) it contains no "women's occupations".

There is substantial evidence resulting from the numerous empirical applications of prestige scales that the prestige of occupations is nearly constant. In their assessment of occupational prestige in the U.S. between 1925 and 1963, Hodge, Siegel and Rossi (1964) conclude that there is a high degree of stability in the perception of occupational prestige during that period. This conclusion was based upon a 1963 national replication of the NORC study and an examination of the earlier studies by Counts (1925) and Smith (1943). They found a correlation coefficient of .99 between the scores obtained in the 1947 NORC study and the scores obtained in their 1963 replication. There appeared to be a very slight upward shift in scores during the period, but the most remarkable characteristic was the extreme consistency of scores. They also found substantial correlations (although of slightly smaller magnitude) between the Counts study (1927), the Smith study (1943), and the two more recent national surveys. This led them to the observation, "there have been no substantial changes in occupational prestige in the United States since 1925"(p. 296).

There is also considerable data that indicate the cross-societal stability of occupational prestige scores. By 1971, Marsh reported that occupational prestige data is available for 25 societies (Marsh, 1972; also Inkeles and Rossi, 1956 and Hodge, et al., 1966). It appears from these studies that the overall occupational prestige hierarchy is very similar not only among Western European countries and the United States, but also among developing countries, such as Taiwan and the Phillipines. Although there is less comparable data readily available, it appears that the Communist and Socialist societies, such as Russia, Poland, and Czechoslovakia, also show a similar occupational prestige hierarchy. Perhaps the major exception taken to the above generality can be found in Penn's (1975) comparison of the prestige hierarchy of the United States with those of Czechoslovakia and Poland. He found that the values of Socialist countries leads to a higher ranking than in the U.S. of such occupations as farmers and miners and lower rankings for governmental and political occupations.

Correlates

The significance of analyzing occupational prestige becomes evident when its correlates are understood. For example, Caplow (1954) maintains that the prestige of an occupation is associated with "behavior control"; that is, the influence that an individual who holds that occupation has over others. With this social power thesis in mind, we would anticipate that those who hold higher prestige jobs would have proportionately more subordinates (Marsh, 1971). Thielbar and Feldman (1969) feel that higher prestige occupations are not only associated with power but also are viewed as being more satisfying. They also found that more prestige was given those jobs which concerned problem solving rather than the mere application of routine solutions. In a similar vein, Reiss (1961) has noted that in evaluating occupations, those dealing with symbolic tasks are rated higher than physical ones, occupations requiring formal education are rated above those with just training requirements, clean work is favored over dirty work, and office occupations score higher than factory ones.

Garbin and Bates (1961, 1966) have empirically assessed the relationship between occupational prestige and occupational traits and have found correlations in excess of .80 for 11 of the 20 traits considered. That is, the perception of higher prestige occupations was found to be associated with the following traits:

-Regarded as desirable to associate with
-Intelligence required
-Scarcity of personnel who can do the job
-Interesting and challenging work

-Training required
-Education required
-Work calls for originality and initiative
-Responsibility to supervise others
-Having an influence over others
-Security
-Opportunity for advancement

Simpson and Simpson (1950) found that the NORC scale was highly correlated with a training-education-skill and responsibility scale constructed for the same occupations. They suggested that these two characteristics "could be used to form an index of occupational prestige" (p. 139).

Critiques

It should be noted that there is a substantial body of literature that on one hand attempts to relate occupational prestige to theories of social stratification and on the other to critique the measurement of occupational prestige in terms of its meaning, interpretation, and procedures. The questions are of two general types: (1) "Exactly what is the individual ranking when he rates occupations?"; and (2) "Exactly what do these ratings mean in terms of understanding society?" Frankly, it is beyond the scope of this paper to adequately address even a minority of these positions. However, it does appear obligatory to recognize these divergent and questioning views (Gross, 1959; Gusfield and Schwartz, 1963: Thielbar and Feldman, 1969; Alexander, 1972; Goldthorpe and Hope, 1972; and Stehr, 1974).

The Sample

The original goal of the research was to sample undergraduate agriculture majors in the southern region of the United States. The population was particularly resticted to agricultural majors at the largest College of Agriculture in each of 13 southern states. Although it did not have the largest program in that state, Texas Tech University was also included because it was judged to have both a large student enrollment in agriculture and to play a substantial role in southern agricultural education. The universities thus selected were:

Auburn University
University of Arkansas
Clemson University
University of Florida
University of Georgia
University of Kentucky
Louisiana State University
Mississippi State University
North Carolina State University
Oklahoma State University
University of Tennessee
Texas A&M University
Texas Tech University
Virginia Polytechnical Institute

Interestingly, two of the very earliest occupational prestige studies also utilized agricultural students as raters. For example, George S. Counts (1925) interviewed a group of freshmen as part of his sample who were in the College of Agriculture at the University of Minnesota (Minnesota high school students and teachers were also sampled). The students were asked to rank 45 occupations according to their social standing. W. A. Anderson (1927) conducted a similar study at North Carolina State College (now University) that included a sample of students from the College of Agriculture. A casual examination of both Counts' and Anderson's data suggest that agricultural students did not markedly perceive occupational prestige differently than the other raters.

Student enrollment estimates for fall semester, 1976, were obtained from the National Association of State Universities and Land-Grant Colleges (Hensley, 1976). From these estimates it appeared that a 15 percent sample would yield a manageable target sample of 3 to 4 thousand students and allow for sufficiently accurate estimates.

The Dean of Agriculture at each of the 14 schools was requested to provide a listing, including names and addresses, of undergraduate students who had declared agricultural majors. It should be noted that this approach resulted in some modest inconsistencies in the sampling frame. For example, at the University of Florida, students do not declare majors until their third year--hence the Florida list included only juniors and seniors. Upon receiving the lists from the participating schools, a screening and trimming was carried out primarily to delete graduate and special students should they appear. The lists collectively consisted of 22,766 undergraduate agriculture majors. Utilizing the APL random number generator, a 15 percent random sample was selected from each school. This resulted in an initial target sample of 3,398 students (see Table 1).

Data Collection

In the spring of 1977, sample members were mailed questionnaires with a cover letter explaining the survey. If a sample member had no known mailing address, his or her questionnaire was mailed in care of the Dean of the College of Agriculture with the request that the Dean locate the student and distribute the questionnaire. The time frame for the survey and delinquent returns was March 25, 1977 through May 5, 1977.

The institutional sample sizes and return rates are shown in Table 1. The adjusted sample sizes have excluded graduate and special students. The "raw rate" of return is the number of questionnaires returned divided by the number mailed out. The "adjusted rate" of return is determined by using the sample size adjusted for deleted sample members whose questionnaires were returned as "undeliverable". Adjusted rates varied from 83 percent to 61 percent with an overall rate of 74 percent for the region. The final sample size was 2,392 students (see Table 1 for rates).

Measurement of Prestige

The procedures used to measure prestige of occupations closely approximate those developed in the 1947 National Opinion Research Center or North-Hatt study (Reiss, 1961). Sixty occupations were selected for evaluation. Each student was asked to rate the general standing of each occupation with his or her choices ranging in order from "Excellent standing" to "Poor standing" or "I don't know".

Prestige scores for each occupation were developed by first assigning weights to responses where "Excellent standing" = 100, "Good standing" = 80, "Average standing" = 60, "Somewhat below average standing" = 40, and "Poor standing" = 20. The prestige score for each occupation is the simple average of the assigned weights. The scores range from a possible maximum of 100 to a minimum of 20. Although this algorithm differs slightly from that used in the NORC study (Reiss, 1953), it results in identical prestige

TABLE 1. Sample Sizes and Return Rates for Participating Schools.

Schools	Agriculture School Enrollment (N)	Initial Sample (N)	Adjusted Sample (N)	Returns (N)	Raw Rate (%)	Adjusted Rate (%)
University of Arkansas	691	104	100	83	80	83
Auburn University	1,340	201	193	118	59	61
Clemson University	839	126	118	93	73	78
University of Florida	895	124	118	90	73	76
University of Georgia	1,398	205	193	122	60	63
University of Kentucky	1,295	190	173	133	70	77
Louisiana State University	1,294	193	178	137	71	77
Mississippi State University	1,161	174	164	122	70	74
North Carolina State University	2,538	381	370	284	75	77
Oklahoma State University	1,905	286	275	205	72	74
University of Tennessee	1,422	213	200	146	69	73
Texas A&M University	4,151	625	577	448	72	78
Texas Tech University	1,364	205	203	139	67	68
Virginia Polytechnical Institute	2,473	371	363	272	74	75
TOTAL	22,766	3,398	3,225	2,392	70	74

scores. A second index, Agreement Scores, was calculated for each occupation as the standard deviation of the prestige scores. Thus, the Agreement Scores Index is an estimate of the degree to which respondents converge in their perception of the standing of occupations.

The occupations to be ranked were chosen as follows: The first group was made up of a list of agriculture and agriculture-related occupations based upon (1) interviews with agriculture students as to the type of occupation they expected to enter, (2) interviews with agriculture professors as to the type of occupations their graduates have entered, and (3) a literature review that included the Dictionary of Occupation Titles. From this list of over 300 occupations, 50 agricultural occupations were purposefully selected. Selection reflected an interest to choose occupations with a reasonably high level of recognition and occupations that would span the prestige continuum. There was also an effort to include a range of commodity and livestock type occupations, e.g., cotton, peanut, soybean, and rice growers and cattle, swine, and poultry raisers. A second group of nine occupations were selected from the original NORC list (Reiss, 1961: 54-57), taking every ninth position from that scale. It was planned that these nine NORC occupations would provide a means of transforming the agricultural occupation scores into "standardized" NORC values. Finally, "housewife" was included to estimate the prestige attached to this quasi-occupational title.

Analysis of Data

The Agricultural Occupation Prestige Scale appears as Table 2. The table consists of sixty occupations that were ranked by agricultural students during the spring semester, 1977. Fifty of these are considered to be either agricultural or agriculturally-related occupations. The non-agricultural occupations are indicated by an asterisk. Accompanying the list of occupations are the prestige scores, the occupation's rank in the set, and where possible, the comparable score obtained in the 1947 NORC study. An examination of the table will indicate that the 60 occupations tended to span the range of the NORC scale. Veterinarian, with a prestige score of 92.7, was rated as the most prestigious occupation while migrant laborer, with a score of 34.0, was the occupation with lowest evaluation. It should be recalled that the scaling procedure restricts scores in the range from 20 (a consistent evaluation of "poor standing") to 100 (a consistent evaluation of "excellent standing"). There was also a noted tendency for occupations to cluster toward the middle of the scale. For example, 25 of the occupations were rated as having scores between 60 and 70.

There was a decided tendency for the sample to evaluate professional, managerial, and scientific occupations toward the top of the prestige hierarchy. Veterinarian, physician, Secretary of Agriculture, Dean of Agriculture, and nuclear physicist were given very high ratings. Professor in Agriculture, landscape architect, USDA researcher, wildlife refuge manager and farm manager also obtained high scores. It is interesting to note that in a sample of agricultural students the only occupation that clearly involved production agriculture in this top ten list was farm manager, and it ranked tenth. In addition, plant nursery owner (with a score of 75.3 and rank of 14) and cattle raiser (with a score of 75.1 and rank of 15) were the only other agricultural occupations which tended to fall in the middle range of the hierarchy. Soybean grower, poultry raiser, and rice grower all had scores that fell within a tight band from 62 to 69. The lone

TABLE 2. The Prestige of Agricultural Occupations: Sample of 2,392 Southern Agriculture Students.

Occupation	Prestige Scores	Rank	NORC Scores
Veterinarian	92.7	1	--
Physician*	91.5	2	93
U.S. Secretary of Agriculture	89.4	3	--
Dean of Agriculture	86.4	4	--
Nuclear Physicist*	85.1	5	86
Professor in Agriculture	82.1	6	--
Landscape Architect	79.8	7	--
USDA Researcher	78.8	8	--
Wildlife Refuge Manager	78.0	9	--
Farm Manager	77.2	10	--
Biologist	77.0	11	81
Government Scientist	76.8	12	88
Soil Conservationist	75.5	13	--
Plant Nursery Owner	75.3	14	--
Cattle Raiser	75.1	15	--
Ecologist	74.4	16	--
County Agriculture Agent	74.4	17	77
Agriculture Economist	74.3	18	--
Agriculture Loan Officer	72.7	19	--
Newspaper Agriculture Editor	70.9	20	--
Soybean Grower	69.2	21	--
Tree Farmer	69.0	22	--
Feed Store Owner	69.0	23	--
Horse Trainer	68.5	24	--
High School Vocational Ag. Teacher	68.4	25	--
Cotton Grower	68.4	26	--
Swine Raiser	66.5	27	--
Peanut Grower	65.9	28	--
Tree Surgeon	65.9	29	--
Poultry Raiser	65.7	30	--
Dietician	65.6	31	--

TABLE 2. The Prestige of Agricultural Occupations: Sample of 2,392 Southern Agriculture Students. (cont.)

Occupation	Prestige Scores	Rank	NORC Scores
Florist	65.0	32	--
Housewife*	64.9	33	--
Rural Sociologist	64.5	34	--
Fruit Inspector	64.1	35	--
Restaurant Manager	64.0	36	--
Farm Implement Salesman	63.8	37	--
Crop Duster	63.7	38	--
Home Economist	63.4	39	--
Slaughterhouse Manager	63.0	40	--
Peace Corps Member	62.9	41	--
County Home Demo Agent	62.2	42	--
Rice Grower	62.0	43	--
Railroad Engineer*	60.5	44	77
Jockey	60.0	45	--
Pest Exterminator	58.3	46	--
Undertaker*	56.6	47	72
Incubator Man	55.8	48	--
Railroad Conductor*	53.3	49	67
Rodeo Cowboy	53.0	50	--
Hay Baler	52.6	51	--
Farm Hand	52.4	52	50
Tenant Farmer	47.2	53	68
Groundskeeper	47.0	54	--
Machine Operator*	45.5	55	60
Sharecropper	43.1	56	40
Killfloor Worker	41.9	57	--
Filling Station Attendant*	38.8	58	52
Clothes Presser in Laundry*	34.3	59	46
Migratory Farm Worker	34.0	60	--

*Selected non-agriculture occupations used for reference points to General Occupational Structure exception is what turned out to be the high-prestige mode of farming, cattle raising. In terms of livestock, swine raisers were given substantially lower scores than cattle raisers, and poultry raisers were ranked slightly lower than swine raisers, indicating an interesting "barnyard ranking" of these occupations. This finding, coupled with the informal observation of how cattle raising is romanticized in mass culture, certainly points to cattle raising as a special category of agricultural occupations. As children we might have played cowboys, but certainly not "chicken-boys or pig-boys", and interestingly, the hierarchy is also maintained among such deviant occupations as thieves (cattle rustlers are more prestigious than chicken thieves).

There were twelve occupations that clearly involved traditional agricultural production that we have tentatively arranged into three occupational groups: livestock farming, crop farming and work classification. These groups along with their prestige scores are presented in Table 3.

TABLE 3. Groupings of Production Agricultural Occupations.

Animal Farming	Crop Farming	Work Classification
Cattle raiser (75.1)	Soybean grower (69.2)	Farm manager (77.2)
Swine raiser (66.5)	Cotton grower (68.4)	Farm hand (52.4)
Poultry raiser (65.7)	Peanut grower (65.9)	Tenant farmer (47.2)
	Rice grower (62.0)	Sharecropper (43.1)
		Migratory farm laborer (34.0)

When the production occupations are grouped in this manner, three patterns seem to emerge: (1) In terms of livestock farming, there is an already noted propensity for cattle raising to rank higher than other types and relatively little difference among other types of livestock production. (2) In terms of crop farming, there does not seem to be any clear differentiation with regard to type of crop; rice grower was given somewhat lower prestige than the other occupations which might have resulted from the students' knowing less about rice farming than the other three crops. (3) The sharpest differentiation clearly exists with regard to work classification. Farm managers were given quite high scores while farm hands, tenant farmers, sharecroppers, and what turned out to be the lowest prestige occupation of those considered, migratory farm laborers, were ranked low. It seems clear that farm production occupations were ranked high only if they involved either ownership or management by inference. Also in Table 2, NORC scores for 14 occupations are provided. These values allow us to compare how our students scored occupations relative to the national study. There was a discernable tendency for the students to give lower prestige scores than the national sample. The average agricultural student scores for the 14 occupations was 59.7, while the NORC panel yielded a comparable estimate of 68.4. This implies two things: It suggests that if we wish to transform our scores to some sort of national score, a modest upward adjustment would be in order. It also tends to support the notion developed by Alexander (1972) that individuals of relatively high prestige tend to give lower scores to occupations below them in the prestige hierarchy than a more general sample would.

Although there was a clear tendency for the agriculture student to give lower scores, the correlation between the hierarchy produced by the agriculture students and that produced by the NORC sample was .904, indicating a strong agreement in the ordering of a set of 14 occupations in terms of prestige. A simple regression analysis results in an equation of the form

$$\text{NORC Score} = 18.8 + .83\ (\text{agricultural prestige score}).$$

This expression may be used as an interim basis for calculating scale values similar in magnitude with those produced by NORC. A more detailed and elegant solution to this problem is currently being undertaken by Curry (1978).

In Table 4, the occupations in the scale are re-arranged and ranked according to the degree of agreement in the perception of prestige. The agreement index is, in actuality, the standard deviation of the prestige ratings. An examination of the index indicated that the occupation veterinarian is one that is held in consistently high prestige by most agriculture students. A high level of agreement was also observed for farm manager, feed store owner, professor in agriculture, and county agriculture agent. Of particular note is the other end of the agreement index ranking where there seems to be considerable amount of disagreement about the prestige of such occupations as Peace Corps member, undertaker, housewife, and jockey. The interpretation of higher disagreement scores can probably best be made on an occupation-by-occupation basis. For example, it might be that the considerable disagreement for the occupation of Peace Corps member is a reflection of the students' humanistic orientations. Thus, those who hold a strong humanistic orientation would tend to rank the occupation high, and those who did not, would rank it low.

The occupation of "housewife" may require a different explanation. Since it is a label that does not necessarily bring to mind a specific stereotyped set of tasks, it is possible that a housewife label may conjure up images that range from wealthy women who hire servants to poor ones who wash their clothes by hand.

Sources of Variation

At this point, we now move to an analysis of possible sources of variation in the perception of prestige of agricultural students. The general gist of this analysis will follow the common-sense notion that students from markedly diverse backgrounds and students who have markedly diverse access to certain occupations will tend to perceive a somewhat different prestige hierarchy.

In Table 5, the occupational prestige scores for both male and female students are reported. It is our interpretation that, in general, students of both sexes were perceiving essentially the same prestige hierarchy. A rapid scan of the two lists of scores will reveal that female students gave as high, or almost as high, a rating as male students to those occupations to which they have historically had little access. A correlation coefficient of .96 was found between the male and female scores, indicating the strength of the congruency. There were, however, some small yet systematic differences in the perception of prestige by sex. If we were

TABLE 4. Agreement of Ratings for Prestige of Agricultural Occupations.

Occupation	Agreement (S.D.)	Rank	Prestige Scores	Rank
Veterinarian	13.6	1	92.7	1
Farm Manager	15.7	2	77.2	10
Feed Store Owner	15.8	3	69.0	23
Professor in Agriculture	15.9	4	82.1	6
Soil Conservationist	16.0	5	75.5	13
County Agriculture Agent	16.2	6	74.4	17
Physician*	16.2	7	91.5	2
Farm Implement Salesman	16.3	8	63.8	37
Clothes Press in Laundry*	16.6	9	34.3	59
USDA Researcher	16.9	10	78.8	8
Filling Station Attendant*	17.0	11	38.8	58
Tree Farmer	17.1	12	69.0	22
Plant Nursery Owner	17.1	13	75.3	14
Fruit Inspector	17.1	14	64.1	35
Landscape Architect	17.3	15	79.8	7
Restaurant Manager	17.3	16	64.0	36
Newspaper Agriculture Editor	17.4	17	70.9	20
Agriculture Economist	17.5	18	74.3	18
Soybean Grower	17.5	19	69.2	21
Migratory Farm Worker	17.6	20	34.0	60
Poultry Raiser	17.7	21	65.7	30
Home Economist	17.7	22	63.4	39
Cattle Raiser	17.7	23	75.1	15
Pest Exterminator	17.7	24	58.3	46
High School Vocational Ag. Teacher	17.8	25	68.4	25
Incubator Man	17.8	26	55.8	48
Wildlife Refuge Man	17.9	27	78.0	9
County Home Demo Agent	18.3	28	62.2	42
Florist	18.3	29	65.0	32
U.S. Secretary of Agriculture	18.4	30	89.4	3
Peanut Grower	18.4	31	65.9	28

TABLE 4. Agreement of Ratings for Prestige of Agricultural Occupations. (cont)

Occupation	Agreement (S.D.)	Rank	Prestige Scores	Rank
Groundskeeper	18.5	32	47.0	54
Swine Raiser	18.5	33	66.5	27
Slaughterhouse Manager	18.5	34	63.0	40
Crop Duster	18.5	35	63.7	38
Cotton Grower	18.5	36	68.4	26
Horse Trainer	18.5	37	68.5	24
Dean of Agriculture	18.6	38	86.4	4
Agriculture Loan Officer	18.6	39	72.7	19
Railroad Conductor*	18.7	40	53.3	49
Machine Operator*	18.8	41	45.5	55
Biologist	18.8	42	77.0	11
Hay Baler	18.9	43	52.6	51
Tree Surgeon	19.2	44	65.9	29
Dietician	19.3	45	65.6	31
Killfloor Worker	19.6	46	41.9	57
Railroad Engineer*	19.6	47	60.5	44
Rural Sociologist	19.8	48	64.5	34
Tenant Farmer	19.8	49	47.2	53
Farm Hand	20.2	50	52.4	52
Ecologist	20.3	51	74.4	16
Government Scientist	20.4	52	76.8	12
Sharecropper	20.6	53	43.1	56
Rodeo Cowboy	20.7	54	53.0	50
Rice Grower	21.0	55	62.0	43
Nuclear Physicist*	21.0	56	85.1	5
Jockey	21.6	57	60.0	45
Housewife*	22.3	58	64.9	33
Undertaker*	22.9	59	56.6	47
Peace Corps Member	23.2	60	62.9	41

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*Selected non-agriculture occupations used for reference points to General Occupational Structure

TABLE 5. Sex and the Differences in Prestige of Agricultural Occupations.

Occupation	Sex	
	Male (1715)	Female (675)
Veterinarian	91.8	95.2
Physician	90.5	94.1
U.S. Secretary of Agriculture	88.8	91.0
Dean of Agriculture	86.3	86.5
Nuclear Physicist	83.1	90.2
Professor in Agriculture	81.9	82.6
Landscape Architect	78.1	83.8
USDA Researcher	77.1	80.7
Wildlife Refuge Manager	76.9	80.7
Farm Manager	77.4	76.7
Biologist	75.1	81.8
Government Scientist	75.1	81.0
Soil Conservationist	74.7	77.6
Plant Nursery Owner	74.4	77.4
Cattle Raiser	75.1	75.0
Ecologist	72.0	80.6
County Agriculture Agent	74.0	75.4
Agriculture Economist	73.8	75.5
Agriculture Loan Officer	73.2	71.5
Newspaper Agriculture Editor	70.1	72.9
Soybean Grower	70.0	66.9
Tree Farmer	68.7	69.9
Feed Store Owner	70.0	66.6
Horse Trainer	66.0	74.6
High School Vocational Ag. Teacher	68.7	67.7
Cotton Grower	69.5	65.5
Swine Raiser	67.0	65.0
Peanut Grower	66.7	64.1
Tree Surgeon	64.7	68.9
Poultry Raiser	65.5	66.2

TABLE 5. Sex and the Differences in Prestige of Agricultural Occupations. (cont)

Occupation	Sex	
	Male (1715)	Female (675)
Dietician	63.4	71.1
Florist	63.6	68.5
Housewife	65.8	62.7
Rural Sociologist	62.7	69.1
Fruit Inspector	63.6	65.4
Restaurant Manager	64.0	64.0
Farm Implement Salesman	64.5	62.2
Crop Duster	65.4	59.1
Home Economist	62.9	64.7
Slaughterhouse Manager	64.5	59.0
Peace Corps Member	60.4	69.0
County Home Demo Agent	61.8	63.2
Rice Grower	63.0	59.4
Railroad Engineer	59.8	62.4
Jockey	57.9	65.0
Pest Exterminator	58.6	57.7
Undertaker	56.6	56.4
Incubator Man	55.4	56.7
Railroad Conductor	52.6	55.0
Rodeo Cowboy	53.2	52.5
Hay Baler	53.8	49.3
Farm Hand	51.8	53.8
Tenant Farmer	48.6	43.7
Groundskeeper	46.4	48.3
Machine Operator	46.1	43.9
Sharecropper	43.8	41.3
Killfloor Worker	42.9	39.0
Filling Station Attendant	39.1	38.1
Clothes Presser in Laundry	35.0	32.5
Migratory Farm Worker	33.9	34.0

to use a span of four prestige increments to indicate a real difference in prestige scores (the four-point interval seems fairly consistent on a statistical basis, since the 95 percent confidence interval for scale values was generally less than ± 1), we would find the following patterns: Female prestige scores were higher for a set of occupations that we feel were either scientific, aesthetic or humanistic in nature. For example, in 13 of the comparisons, higher prestige scores were obtained for the women's sample to include the occupations of landscape architect, USDA researchers, biologist, government scientist, ecologist, horse trainer, tree surgeon, dietician, florist, rural sociologist, Peace Corps member, jockey and nuclear physicist. Male students, on the other hand, tended to rank such occupations as cotton grower, crop duster, slaughterhouse manager, hay baler, and tenant farmer as having higher prestige. This seems to imply that women gave higher prestige to scientific, aesthetic, and humanistic occupations because they constitute occupations that are more accessible for females than, say, production agriculture jobs. This inclination should be tempered by the finding that such traditionally female endeavors as home economist, clothes presser in a laundry, and housewife were scored about the same by both males and females.

In Tables 6, 7, and 8 (omitted due to space restrictions: available upon request), the influence of farm background upon the perception of prestige of agriculture occupations is investigated using three different indicators. In Table 6, we investigated the differences in prestige relative to the size of the place the student lived most of his or her life; in Table 7, we presented a comparison between students who have lived on a farm; in Table 8, we reported the scores of those students whose families own, rent, or lease farms and those whose families do not. A detailed analysis of all these tables is beyond the space allotted for this paper. However, we do feel that some generalizations about the data can be brought forth. It appears to us at this point in our analysis that farm background experience, or conversely, urban experiences do not result in any fundamentally different prestige hierarchy; that is to say that throughout these rather lengthy tables those differences which do occur tended to be slight in magnitude and there were certainly no radically different prestige hierarchies for any subgroup. There was a slight tendency for students with farm backgrounds to give higher scores to those occupations which came into closer contact with the ongoing operations of a farm--for example, feed store owner, crop duster, farm implement salesman, and hay baler. Also for reasons that are less than clear, students with farm backgrounds tended to rank lower such occupations as biologist, government scientist, ecologist, and Peace Corps member.

Conclusions

It appears that the increased complexity, specificity, and diversity that are characteristic of the general American occupational structure are also reflected in the agricultural sector. Our investigation of 50 agricultural or agriculturally-related occupations resulted in a wide array of prestige rankings of these occupations along nearly the entire prestige spectrum. One obvious conclusion is that the occupational structure of agriculture is hardly viewed as a monolithic prestige category, but rather is composed of many occupations perceived as having varied degrees of social standing. It is also suggestive from our analysis that at least certain dimensions underlying prestige ratings are shared by both the general occupational structure and agricultural occupations. As in the case with general occupational ratings, we found that professional, technical, and managerial occupations tended to receive the highest prestige scores, and occupations involving unskilled, semi-skilled, and manual labor tended to receive the lowest ratings. In this sense, our prestige scale bracketed the range from veterinarian to migratory farm laborers.

Interestingly, even among our sample of undergraduate agricultural majors, most professional and technical positions ranked above the central and most significant occupation of farming, for this subset of occupations. It can be hypothesized that the somewhat lower rating given farmers may be associated with the perception of a manual labor component intrinsic to farming. The only traditionally agricultural production occupation that received a higher prestige rating was the highly romanticized occupation of "cattle raiser". Agricultural occupations that involved a high degree of manual labor, such as migrant laborers and farm hands, were given very low ratings. Production agriculture occupations were grouped along three dimensions--crops, livestock, and work classification. Generally, we found little variation in occupational prestige among crop farming, i.e., soybean, cotton, peanut, and rice growers were not given markedly different prestige ratings. Along the livestock dimension, swine and poultry raisers were rated similarly, while that glamour farming occupation, cattle raiser, as previously mentioned, received substantially higher ratings. In terms of work classification, only farm managers had relatively high prestige scores. In fact, those occupations which approximated the "hired hand" type were among the very lowest occupations in prestige. It should be noted that throughout the analysis the category of migrant farm laborer was in every instance given the lowest scores.

Also indicated was the fact that while some occupations were rated quite differently in our study as compared to such national reference points as the 1947 NORC study, both groups were perceiving a very similar overall occupational hierarchy. Fourteen occupations appeared in both studies. It was remarkable that a correlation of .90 was obtained between scores for the 1947 NORC study and our 1977 study of agricultural occupations given the differences in populations and the thirty-year time lapse since the 1947 study. Although it remains unclear the degree to which our scores may be generalized and merged with the NORC scores for the general U.S. population, our initial analysis does point to the possible utility of producing a slightly upward adjusted version to be used in conjunction with the NORC scale.

Tentatively, it seems that the occupational hierarchy as revealed by our rating scale is generally pervasive throughout groups and subclassifications among agriculture students. Thus, a rather lengthy analysis of prestige scores by sex and indicators of farm background failed to result in any drastically different prestige hierarchies. Both male and female students, both urbanites and students from farms, both students from families who owned farms and those from families who did not were apparently viewing a similar prestige hierarchy of agricultural occupations. The most notable exception to this generalization was for women agriculture students to give slightly higher prestige evaluations to scientific, humanistic and aesthetic occupations.

A closing caveat is in order. We wish to stress that the analysis presented in this report is preliminary, and consequently all conclusions are of necessity tentative. We are currently projecting continued work on this scale over the next several months, with special attention being given to an expansion of the investigation into possible sources of variation in the perception of prestige and a parallel investigation into possible methods of producing generalizable prestige scores. A more definitive evaluation of the Agricultural Prestige Scale and of our conclusions about the nature of the prestige structure of agricultural occupations will await this additional analysis.

Credits

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REFERENCES

Alexander, C. Norman, Jr.
1972 "Status perceptions." American Sociological Review 37:767-773.

Anderson, W. A.
1927 "Occupational attitudes and choices of a group of college men. Part I." Social Forces 6:278-283.

Anderson, W. A.
1928 "Occupational attitudes and choices of a group of college men. Part II." Social Forces 6:467-473.

Caplow, Theodore
1954 The Sociology of Work. Minneapolis: University of Minnesota Press.

Counts, George S.
1925 "The social status of occupations: a problem in vocational guidance." School Review 33:16-27.

Curry, E. W. and A. G. Cosby
1978 "A comparison of prestige of selected occupations: a preliminary inquiry into generalizability." A paper read at the Southern Association of Agricultural Scientist's Convention, Houston, Texas.

Garbin, Albeno P. and Frederick L. Bates
1961 "Occupational prestige: an empirical study of its correlates." Social Forces 40:131-136.

Garbin, A. P. and Frederick L. Bates
1966 "Occupational prestige and its correlates: a re-examination." Social Forces 44:295-302.

Goldthorpe, John H. and Keith Hope
1972 "Occupational grading and occupational prestige." Social Science Information 11:17-73.

Gross, Edward
1959 "The occupational variable as a research category." American Sociological Review 24:640-649.

Gusfield, Joseph R. and Michael Schwartz
1963 "The meanings of occupational prestige: reconsideration of the NORC scale." American Sociological Review 28:265-271.

Hensley, Norma
1976 "Agricultural enrollment in the National Association of State Universities and Land-Grant Colleges Member Institutions." A report to the Resident Instruction Section, Division of Agriculture, Washington, D.C.

Hodge, Robert W., Paul M. Siegel, and Peter H. Rossi
1964 "Occupational prestige in the United States: 1925-1963." American Journal of Sociology 70:28-302.

Inkeles, A. and P. H. Rossi
1956 "National comparisons of occupational prestige." American Journal of Sociology 61:229-239.

Marsh, Robert M.
1971 "The explanation of occupational prestige hierarchies." Social Forces 50:214-22.

Penn, Roger
1975 "Occupational prestige hierarchies: a great empirical invariant?" Social Forces 54:352-364.

Reiss, Albert J.
1961 Occupations and Social Status. New York: The Free Press of Glencoe, Inc.

Simpson, Richard L. and Ida Harper Simpson
1960 "Correlates and estimation of occupational prestige." American Journal of Sociology 66:135-140.

Smith, Mapheus
1943 "An empirical scale of prestige status of occupations." American Sociological Review 8:185-192.

Stehr, Nico
1974 "Consensus and dissensus in occupational prestige." British Journal of Sociology 25:410-427.

Thielbar, Gerald and Saul D. Feldman
1969 "Occupational stereotypes and prestige." Social Forces 48:64-72.

Wilkinson, Forrest
1929 "Social distance between occupations." Sociology and Social Research 13:234-244.

AN EXAMINATION OF THE RELATIONSHIPS BETWEEN CERTAIN EDUCATIONAL VARIABLES AND THE OCCUPATIONAL EXPECTATION EXPRESSED BY COLLEGE STUDENTS OF AGRICULTURE

Lawrence W. Drabick and Rhett Humphries

Information contained in this paper represents an initial analysis of data obtained pursuant to objective three of the USDA-CSRS Regional Research Project S-114, "Defining and Achieving Life Goals: A Process of Human Resource Development."

The intent of the paper is to investigate the possible influence exerted upon expected occupation expressed by students in schools and colleges of agriculture of a number of independent variables representative of preceding educational experience.

The existence of a relationship between educational attainment and socioeconomic status is widely and uniformly recognized, supported by extensive research in the United States and elsewhere. It is possible that this relationship is so vivid in the cultural norms of the United States as to be functionally revealed in the occupational expectations of youths. In a more particularistic and restricted sense, it may be that specific features of the educational experience relate to the nature of occupational expectation.

In contrast to the majority of studies examining the relationship between education and occupational expectation, data reported here were obtained from college students. An anticipated benefit is that both the additional amount of educational experience and the maturity of the students may serve to make the relationship more intense.

We hypothesize a series of discrete relationships between specific educational variables and the expected occupational situses of college students. The inclusive working hypothesis of analysis is that the occupational choices of the respondents in the ultimate sense will be products of the interactive influence of prior educational experiences. It is our hope eventually to develop a model which will indicate the extent and nature of the effective relationship. This paper represents the first step toward that goal.

Commitment to presentation of a paper at this meeting in retrospect appears to have been premature. Distribution of the data from the central processing base has not achieved anticipations. Consequently, the data of this paper relate only to that part of the regional sample which is located in the School of Agriculture and Life Sciences at North Carolina State University, which itself has but recently become available. It is our intent, as it becomes possible, to extend analysis to the regional data for the purpose of establishing the model of relationship, as well as for comparison of response based on a number of antecedent variables.

The dependent variable of this analysis was obtained from responses to the question: "Sometimes we are not always able to do what we want most. What kind of job do you really expect to have most of your life? Please give the exact job." Responses were coded uniformly for the region, using a combined score for males and females which is based upon status scores developed by the Bureau of the Census.

The influence of many independent variables were examined. For reasons of parsimony, each will be named, defined, justified, and discussed in succeeding single paragraphs. In those cases in which the independent variable is expressed as a nominal value, analysis basically will consist of chi-square. Where the independent variable achieves ordinal value, analysis will be based upon gamma.

College Major. This variable consisted of the first response given to the request to name respondent's major(s) or concentration(s). An undefined status directionality is assumed to inhere between educational specialization and subsequent employment. For our purposes, majors have been considered representative of "academic interests," "technology," "plants," or "animals." This classification is rough and arbitrary, and susceptible to improvement. However, it did result in a chi-square value in excess of 44, with a probability level of .0000 at 9 degrees of freedom. V equalled .2699, and C .4236, indicating a degree of relationship. We conclude that the influence of college major is worthy of further consideration.

College Class. This variable was based upon classification as freshman, sophomore, junior, senior, graduate student, and other. It was believed that the additional experiences encountered as one worked their way through college would discriminate occupational expectation, directionally. The gamma was .0434, in the proper direction, but so small as to eliminate this variable from additional analysis. Apparently one's occupational expectations do not increase substantially as one proceeds through college.

Type of High School From Which Graduated. As originally included in the questionnaire, this variable was visualized to incorporate public schools, both secular and religious private schools, and a residual category of other. It was assumed that value and curricular distinctions characterizing the various forms of education would lead to variant occupational goals. In reality, most of the respondents came from public schools, and the remaining three categories were collapsed as a residual. The chi-square value was less than 3, with a probability level of .5380 at 3 degrees of freedom. Conceivably, a sample with distribution across the various forms of high schools may have met expectations of occupational variation but we were forced to abandon the idea for this sample.

Size of High School Graduating Class. This variable was collapsed from 9 categories on the questionnaire to 4 in the analysis: less than 100, 100-199, 200-399, 400+. This scheme seemed more realistic when the data were available, and lent itself to more meaningful computation. The undergirding rationale was that students from larger schools would have developed higher occupational expectations as a consequence of the greater diversity of offerings and values received therein. Grouped into classifications, the data, which might otherwise have been considered to assume metric values, could only be considered ordinal. The gamma value was .2531. Not large, but interesting and in the proper direction. We decided to retain it for further analysis.

High School Grade Point Average. This variable is an estimate, made by the respondent, of which of the standard letter or number grades was "closest" to his high school average. The assumption would be that students with higher averages would be competent for and aspire to jobs with greater status and remuneration. The basically metric value of the scores was depreciated by grouping into ordinal values. Gamma was .2025, in the right direction, but not quite so enticing as that for size of graduating class. Still sufficiently compelling that it was retained for additional analysis.

Participation in High School Extra-Curricular Activities. Here were included activities ranging from participation in athletics, through subject matter clubs, to honor societies, divided into non-participation,

participation, and leadership. The premise was that participation, and particularly leadership, was indicative of personal characteristics and values which would associate positively with higher occupational expectation. The finding was that participation in only two activities was distinguishing of occupational expectation -- 4-H and FFA. Gammas were, respectively, -.6435 and -.4249. While there might be some advantage to investigating this negative relationship further in the future, to do so would seem discriminatory. Quite clearly, respondents in this sample had not been influenced in their occupational expectations by extra-curricular participation.

Transfer From Other College. Respondents were asked whether they had initially matriculated at their college of residence, or transferred from some other institution. Those who had transferred were requested to designate the type of previous college. A non-defined relationship to occupational expectation was assumed to relate to the stability component involved in the decision of whether to change colleges. The chi-square value was 8.475, at 6 degrees of freedom, not significant. It is presumed unrelated to occupational expectation, and not herein pursued.

College Grade Point Average. This variable is student-reported, with first-year students removed, and adjustment made for differential computation of 3-point scales and 4-point scales. The basic premise is that students with better grades would perceive themselves capable of competing for better jobs. The gamma value was .4460, and the variable retained for further analysis.

Changed College Major. The variable was determined on the basis of the student's response. The assumption, not given direction, was that change of major would represent an aspect of student values and personality which might be associated with occupational expectation. The chi-square value was in excess of 13, significant at .0034 with 3 degrees of freedom. The variable was retained for additional analysis of effect.

Changed College Major Within Agriculture. For those students who had changed majors, it was requested that they indicate whether they had moved into agriculture, or moved within it. Again, the direction of influence upon occupational expectation was not assumed. The chi-square value was less than 4, not significant, and the variable abandoned for further investigation at this time.

Participation in College Extra-Curricular Activities. The variable was derived from student reports of membership in or leadership of various organizations, mostly associated with the School of Agriculture, and ranging from judging teams, to departmental clubs, to professional societies and honorary fraternities. The premise was that the drive, dedication, and identification associated with participation in these activities would translate into higher occupational expectations. Findings with regard to the participation variable were erratically varied. In general, chi-square values were very low, and only that of participation in honorary fraternities was significant. There is an indication of a negative relationship between extra-curricular participation and occupational expectation. Many of the comparisons were confounded by low sample numbers, as few as one in several instances. The presumed relationship remains theoretically compelling, but further analysis must be delayed until additional data are available.

Amount of Education Desired. When queried concerning desired amount of education, few respondents indicated that they would drop out of college before completing the bachelor's degree. The variable was divided for analysis along the traditional lines of attaining a bachelor's, master's, or doctor's degree. The premise was that the greater the desired attainment, the higher would be the expected occupation. The gamma was .5923, and the analysis will be carried further.

Amount of Education Expected. This variable was obtained and classified in the same manner as was desired education, sharing the same assumptions of influence. Gamma was .7498, and the relationship will be examined in more detail.

Whether Advanced Education Will Be In Agriculture. Those respondents expecting to work for advanced degrees were asked whether they would continue in agriculture. A nondirectional assumption of relationship to occupational expectation was posited. The chi-square value was 8.4898, significant at .0369 with 3 degrees of freedom. The influence of this variable will be examined in more detail.

Remain At Present University for Advanced Education. Respondents who expected to work for advanced degrees were requested to note whether they would do so at the same institution or move to another. A nondirectional influence was posited to exist. The chi-square value was 6.6815, not significant, and the variable will not be developed further.

The anticipated relationship between educational variables and occupational expectation held, in this sample, for college major, size of high school graduating class, high school grade point average, college grade point average, change of major in college, amount of education desired, amount of education expected, and intention to remain in agriculture for advanced education. The statistics were not compelling in all instances, but each seemed worthy of further investigation. Several other variables, particularly those relating to the influence of participation in extra-curricular activities, demand additional analysis as the regional data become available. The ultimate model of relationship will be dependent upon the regional data. What is now available is only suggestive and can but provide leads for more detailed analysis.

A number of variables shown elsewhere to be affiliated with occupational expectation also exerted that influence upon this sample. (Sex of respondent, chi-square 10.5016, probability .0148 at 3 degrees of freedom. Residence, chi-square value 50.7714, probability .0000 at 12 degrees of freedom. Father's occupational status, gamma .3182.) Analysis is here extended to determine the effect upon the previous relationships between educational variables and occupational expectation of exercising these variables as controls.

Effect of Controlling for Sex, Residence, Father's Occupation, College Major (34.6235, 9, .0000). When controlled for sex of respondent, the influence of college major remained highly significant for males and females, although more so for the former.

Control by residence disrupted the effect of college major upon occupational expectation. The relationship remained significant by chi-square analysis for the farm and the medium city-metropolitan classifications, but lost significance for the country, town, and small city categories.

Control by father's occupation also disrupted the relationship between major and occupational expectation. Chi-square values for all four statuses were nonsignificant.

Size of High School Graduating Class (25315). Interposition of the sex variable upon the relationship between size of graduating class and occupational expectation resulted in a gamma of .3215 for males and of .1009 for females, an obvious disruption.

Control of the effect of residence also disrupted the relation of class size to occupational expectation. The original *gamma* of .2531 was reduced to meaningless values for all residence categories. But there was an apparent directionality, with negative *gammas* for farm and for country respondents, and larger, although small, positive gammas in each of the urban categories.

Occupation of father affected this relationship also, with higher *gammas* for lowest and third quartiles of occupational status, and lower ones in the other two quartiles.

High School Grade Point Average (.20253). This relationship, weak to begin with but pursued because logic insisted it should exist, was given additional dimension by the control of respondent's sex. The original *gamma* altered to a value of .18692 for males and .39245 for females. It is obvious that much of the affect is associated with the sex of the respondent.

The relationship of high school grade point average to occupational expectation was great among farm and country respondents, with *gammas* respectively of .5990 and .5723. Lesser values were generated by respondents in other residence categories, although all but those for small city residents were greater than the uncontrolled *gamma* had been. The original relationship was affected by the intrusion of residence as a control, but remained influential.

Father's occupation influenced the effect of high school grades, with a *gamma* of .6027 for respondents in the lowest status quartile, and of .0594 for those in the highest. Apparently occupational status of father was of more importance in occupational expectation than was the grade status in high school.

College Grade Point Average (.4460). *Gamma* values with sex controlled varied little from the uncontrolled figure, indicating that the effect, although slightly exaggerated, basically was uninfluenced by the interposition of a sex control.

With residence exerted as a control, *gamma* values fluctuated around the uncontrolled value in a manner to indicate an interactive influence of college grade and residence.

The same was true when father's occupation was used as a control -- variation of the resultant *gammas* around the original, indicating simultaneous influence upon occupational expectation of GPA and status.

Changed College Major (10.5368, 3, .0034). The chi-square value for males who changed majors continued to be significant in relation to occupational expectation, while that of females was not. The trend was for males who had changed to expect higher occupational status in greater degree than did those who had not changed. For females, there was no directionality evident in the tables. Sex had disrupted the original observation of relationship.

Within residence categories the influence of changing college major generated statistically significant chi-square values for farm respondents and for those from the large cities and metropolitan areas, but not for those from other residence categories. Residence had disrupted the influence of changing major, with none of the farm changers opting for high status positions and most of the city nonchangers expecting high occupational status.

With father's occupation controlled, respondents in the lowest two status quartiles continued to generate statistically significant chi-squares, but lacking consistent tabular distributions. Chi-square values for the upper two quartiles were not significant, indicating an effect upon the original relationship inherent in the control variable.

Amount of Education Desired (.59231). Males associated desired education with expected occupation to much greater degree than did females: respective *gamma* values .72772 and .18361. The greatest proportion of male response, one third, fell into the highest quartile of occupational status, while the greatest proportion of female response, 39 percent fell in the next to lowest quartile. Sex of respondent was a disruptive influence.

Control of residence affected *gamma* values rather widely about the original value, indicating a disruptive influence but not discounting an influence of desired education.

The situation was substantially the same with father's occupation used as a control. *Gamma* values differed from those of the uncontrolled desired education-expected occupation, but not widely, giving rise to a belief that an interactive influence was at work.

Amount of Education Expected (.74998). Control of sex resulted in variant *gamma* values for males and females, .80728 and .58897 respectively. But each of these values is quite high and indicative of a continuing effect of expected education upon one's occupational destination.

Control by residence affected the *gammas* of association between amount of education expected and expected occupation, but left all high, ranging between .5259 and .8511.

The situation was the same with control by father's occupation. *Gammas* ranged between 6150 and .8480.

Clearly, the relationship between expected education and expected occupation is very strong.

Remain In Agriculture for Advanced Education. When this relationship was considered separately for males and females, the chi-square value was reduced to a point below significance in each case.

Chi-square values also were reduced below significance when residence was imposed as a control, in each residence category. However, Cramer V values were quite high, indicating the possibility of a continuing association between intention to remain in agriculture and expected occupation. Examination of the tables appears to associate movement with higher expectations. This relationship warrants further investigation.

Essentially the same situation resulted when father's occupation was used to control the primary relationship. Low chi-square and high Cramer values, with a tendency for greater occupational expectation on the part of those respondents who considered moving to another curriculum.

In summary, the results of using sex, residence, and father's occupation as controls upon the relationships between the dependent variable of occupational expectation and the dependent variables of college major, size of high school graduating class, high school grade point average, college grade point average, a change of college major, desired education, expected education, and intent to remain in agriculture to pursue advanced degrees, are these.

College major retained its significance when controlled by sex, lost it in two of three categories of residence control, and lost it in each of the four categories of father's occupation. The effect of college major is not spurious, nor is it independent. It seems to exert an interactive influence upon occupational expectation.

Size of graduating class washed out as a factor when controlled by sex, and when controlled by residence. Additionally, it lost much but not all of its effect when controlled by father's occupation. It appears to have a low-order interactive influence upon occupational expectation, the value of which may be determined by other analytical approaches.

High school grade point average lost its discriminatory influence when controlled by sex. While still related to occupational expectations of females, the generally higher expectations of males were clearly evident and over-rode the influence of high school grades. Residence also disturbed the effect of grades, although not so completely nor directionally as had sex. What had been a low association initially appears strongly influenced by respondent residence, but the analysis was adversely affected by small numbers of respondents in some categories. Introduction of father's occupation as a control quite obviously influenced the relationship of high school grades to occupational expectation. This variable probably should not be given further consideration.

Interpretation of the influence of college grades led to different conclusions. First, control by sex had little effect, with both males and females exhibiting a relationship of grades to expected occupation. Residence was influential, but the degree of association, while varying, continued to be present in all categories. The same was true when father's occupation was used as a control: Varying degrees of association in the various status categories, but all sufficiently high to indicate a continuing effect of grades.

The relationship between changing one's major and expected occupation was largely removed by application of sex, residence, or father's occupation. The degree of association was substantial in many cases, however, and personal predisposition and curiosity conduces toward further examination of the effect of this variable before abandoning it as spurious.

Exertion of sex as a control destroyed the influence of desired amount of education upon expected occupation, apparently the result of a generalized, pervasive cultural bias. Residence did not do so, nor did father's occupation. This variable is strongly related to respondents' occupational expectations.

The independent variable of expected education retained its association with expected occupation as sex, residence, and father's occupation were used as controls. A negative effect was evident with regard to female respondents, but the degree of association remained high. This variable is strongly related to respondents' occupational expectations.

Use of the controls reduced the influence of intent to remain in agriculture while pursuing higher education, below significance levels in all cases. Before considering the original significant relationship to be spurious, it will be necessary to account for the high degree of association evidenced by Cramer V values which occurred consistently with regard to this variable.

Conclusions

Several methodological issues inhibit drawing conclusions regarding the above associations at this time. First, we simply have not had the data in hand sufficiently long to have been able to subject it to adequately searching scrutiny. Secondly, restriction to the North Carolina data has led to small cell numbers which at times have confused analysis, and further has the effect of preventing generalization. We will want to examine the regional data before making irrevocable comments regarding the nature of the relationships of which this paper represents a tentative beginning. Thirdly, we propose some alteration in variable categories before proceeding with analysis. As a prime example, we probably will change the categories of expected occupation from the present quartiles, which were based on placement of sample response and may therefore be subjectively influenced by sample characteristics.

We do believe that the analysis conducted to date indicates that our original assumption of relationship between prior educational experience and occupational expectation has some prima facie validity. We intend to examine that assumption further, first establishing the existence of relationship for specific variables, and then investigating the independence of those relationships determined to exist. Ultimately, we shall attempt to determine the extent of influence of each apparently effective variable, as it interacts with others in exerting influence upon the expected occupation.

TABLES ESTABLISHING RELATIONSHIP OF VARIOUS FACTORS, EXERCISED AS INDEPENDENT VARIABLES AGAINST OCCUPATIONAL EXPECTATION OF NCSU AGRICULTURE STUDENTS (In all cases, occupational expectation is divided into quartiles based upon response of the sample.)

SEX

	Male	Female	
	41	13	54
Quartile	26.3%	16.9%	
	31	29	60
Lowest	19.9%	37.7%	
	35	19	54
Second	22.4%	24.7%	
	49	16	65
Third	31.4%	20.8%	
Highest	156	77	233

x^2 = 10.501, 3, .0148
V = .2123; C = .2076; G =-.0649

COLLEGE MAJOR

Academic	Technology	Plant	Animal	
11	34	4	1	50
12.4	45.3	21.1	4.5	
26	17	5	2	50
29.2	22.7	26.3	9.1	
23	15	6	5	49
25.8	20.0	31.6	22.7	
29	9	4	14	56
32.6	12.0	21.1	63.6	
89	75	19	22	205

x^2 = 44.8289, 9, .0000
V = .2699; C = .4236; G =-.0445

COLLEGE CLASS

Freshman	Sophomore	Junior	Senior	
15	9	15	16	55
30.0	16.7	27.3	21.6	
13	20	11	16	60
26.0	37.0	20.0	21.6	
7	8	15	23	53
14.0	14.8	27.3	31.1	
15	17	14	19	65
30.0	31.5	25.5	25.7	
50	54	55	74	233

x^2 = 12.7797, 9, .0172
V = .1352; C = .2280; G = .0434

RESIDENCE

Farm	RNF	Town	Small City	Medium to Metropolitan	
29	4	4	7	11	55
59.2	14.8	11.8	15.2	14.1	
10	10	11	13	16	60
20.4	37.0	32.4	28.3	20.5	
5	6	10	12	21	54
10.2	22.2	29.4	26.1	26.9	
5	7	9	14	30	65
10.2	25.9	26.5	30.4	38.5	
49	27	34	46	78	234

x^2 = 50.771, 12, .0000
V = .2687; C = .4220; G = .3658

RANK OF FATHER'S OCCUPATION, BY QUARTILES

Lowest	Second	Third	Highest	
29	8	10	7	54
49.2	14.0	18.9	12.7	
13	20	10	13	56
22.0	35.1	18.9	23.6	
8	12	16	15	51
13.6	21.1	30.2	27.3	
9	17	17	20	63
15.3	29.8	32.1	36.4	
59	57	53	55	224

x^2 = 33.872, 9, .001
V = .2245; C = .3624; G = .3182

TYPE OF HIGH SCHOOL

Public	Other	
50	4	54
23.4	20.0	
57	3	60
26.6	15.0	
49	5	54
22.9	25.0	
58	8	66
27.1	40.0	
214	20	234

x^2 = 2.169, 3, .538
V = .0962; C = .0958; G = .2081

SIZE OF GRADUATING CLASS

-100	100-199	200-399	400+	
7	23	16	7	53
24.1	40.4	22.9	9.2	
4	18	17	21	60
13.8	31.6	24.3	27.6	
10	7	19	17	53
34.5	12.3	27.1	22.4	
8	9	18	31	66
27.6	15.8	25.7	40.8	
29	57	70	76	232

x^2 = 28.9134, 9, .0007
V = .2038; C = .3328; G = .2531

HIGH SCHOOL GRADE POINT AVERAGE

C	B	A	
11	32	11	54
39.3	25.4	14.1	
5	33	21	59
17.9	26.2	26.9	
4	31	19	54
14.3	24.6	24.4	
8	30	27	65
28.6	23.8	34.6	
28	126	78	232

x^2 = 9.9935, 6, .1249

V = .1467; C = .2032; G = .2025

TRANSFER STUDENT

No	2-year	4-year	
46	6	3	55
25.0	37.5	10.3	
46	4	9	59
25.0	25.0	31.0	
38	3	11	52
20.7	18.8	37.9	
54	3	6	63
29.3	18.8	20.7	
184	16	29	229

x^2 = 8.4751, 6, .2053

V = .1360; C = .1889; G = -.0019

CHANGED COLLEGE MAJOR

Yes	No	
32	23	55
25.0	21.5	
35	25	60
27.3	23.4	
37	17	54
28.9	15.9	
24	42	66
18.8	39.3	
128	107	235

x^2 = 13.6886, 3, .0034

V = .2413; C = .2346; G = .2073

MEMBER OF HONORARY FRATERNITY

Yes	No	
2	44	46
5.9	25.3	
7	47	54
20.6	27.0	
7	42	49
20.6	24.1	
18	41	59
52.9	23.6	
34	174	208

x^2 = 14.1010, 3, .0028

V = .2603; C = .2519; G = -.4949

PARTICIPATION IN 4-H

Yes	No	
19	20	39
13.3	60.6	
39	5	44
27.3	15.2	
35	6	41
24.5	18.2	
50	2	52
35.0	6.1	
143	33	176

x^2 = 36.7068, 3, .0000

V = .4566; C = .4154; G = -.6718

COLLEGE GPA

-2.0	2.0-2.4	2.5-2.9	3.0-3.4	3.5-3.9	
8	17	18	9	2	54
53.3	32.7	27.7	15.0	6.3	
4	16	18	14	4	56
26.7	30.8	27.7	23.3	12.5	
2	12	20	12	5	51
13.3	23.1	30.8	20.0	15.6	
1	7	9	25	21	63
6.7	13.5	13.8	41.7	65.6	
15	52	65	60	32	224

x^2 = 50.9029, 12, .0000

V = .2752; C = .4304; G = .4460

PREVIOUS MAJOR IN AGRICULTURE OR HOME EC

Yes	No	
21	11	32
30.0	19.0	
20	15	35
28.6	25.9	
19	18	37
27.1	31.0	
10	14	24
14.3	24.1	
70	58	128

x^2 = 3.4382, 3, .3289

V = .638; C = .1617; G = .2425

DESIRED AMOUNT OF EDUCATION

	Bachelor's	Master's	Doctorate or Professional	
	28	12	11	51
	46.7	23.5	9.7	
	17	19	22	58
	28.3	37.3	19.5	
	10	16	25	51
	16.7	31.4	22.1	
	5	4	55	64
	8.3	7.8	48.7	
2	60	51	113	224

x = 62.8880, 6, .0000
V = .3746; C = .4682; G = .5923

EXPECTED AMOUNT OF EDUCATION

	Bachelor's	Master's	Doctorate or Professional	
	42	6	2	50
	36.8	14.0	3.1	
	40	10	5	55
	35.1	23.3	7.8	
	24	21	8	53
	21.1	48.8	12.5	
	8	6	49	63
	7.0	14.0	76.7	
2	114	43	64	221

x = 123.1919, 6, .0000
V = .5279; C = .5982; G = .7498

REMAIN IN AG OR HOME EC FOR EXTENDED EDUCATION

	Yes	No	
	16	3	19
	19.3	7.3	
	17	5	22
	20.5	12.2	
	23	9	32
	27.7	22.0	
	27	24	51
	32.5	58.5	
2	83	41	124

x = 8.4898, 3, .0369
V = .2616; C = .2531; G = .4252

REMAIN PRESENT UNIVERSITY FOR ADVANCED EDUCATION

Yes	No	
8	11	19
20.0	13.1	
8	14	22
20.0	16.7	
14	18	32
35.0	21.4	
10	41	51
25.0	48.8	
40	84	124

x^2 = 6.6815, 3, .0828

V = .2321; C = .2261; G = .3050

DESIRED OCCUPATION

Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile	
36	10	1	6	53
44.4	19.6	6.7	7.5	
26	17	0	14	57
32.1	33.3	0.0	17.5	
16	21	4	11	52
19.8	41.2	26.7	13.8	
3	3	10	49	65
3.7	5.9	66.7	61.3	
81	51	15	80	227

x^2 = 109.6025, 9, .0000

V = .4011; C = .5706; G = .6488

ANTICIPATED INCOME IN FIRST JOB AFTER COLLEGE

-$10,000	10,000 - 17,499	17,500+	
27	21	1	49
38.0	16.8	3.8	
18	41	0	59
25.4	32.8	0.0	
22	28	3	53
31.0	22.4	11.5	
4	35	22	61
5.6	28.0	84.6	
71	125	26	222

x^2 = 68.9569, 6, .0000

V = .3940; C = .4868; G = .5638

Section C

STATUS ATTAINMENT

"Race and Sex Differences in Aspiration Formation Processes of High School Youth in the South." Frank M. Howell and Wolfgang Frese, Mississippi State University.

"The Role of Family Background and Attitudes in the Choice of a College Major in Home Economics." Jerri Hayes, Elmira O. Gilbert, and J. E. Dunkelberger, Auburn University.

"Racial Composition of Schools and Mobility Projections of South Carolina Black Youth." Glenna Colclough, Clemson University.

Race And Sex Differences In Aspiration Formation Processes Of High School Youth In The South*

Frank M. Howell
Wolfgang Frese
Mississippi State University

ABSTRACT

The ascriptive properties of race and sex in structuring the status aspiration formation process have recently been analyzed and generally support the "Wisconsin" social psychological model for middle class youth. This analysis cross-validates such research by contrasting race-sex differentials in aspiration formation for high school students of low-SES background using data collected in 1975. The most general finding is the rejection of much conventional thinking regarding the application of this model to contemporary whites of low social origins. Often reported race differentials in the aspiration formation process disappear, and even reverse, at this level of the socioeconomic distribution. Explicitly, black parents, especially of females, appear to encourage further schooling for offspring much more on the basis of ability and performance that do white parents. The model also appears to "fit" blacks better than whites in terms of internal consistency and predictive power. The pronounced sex differences reported elsewhere for whites but not blacks are not as distinct here, but do exist. Further investigation is specified.

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THE ROLE OF FAMILY BACKGROUND AND ATTITUDES IN THE CHOICE OF A COLLEGE MAJOR IN HOME ECONOMICS*

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For several decades a diversification of home economics related occupations has been occurring (Lee and Dressel, 1963). This change has resulted in a corresponding increase in the number and variety of curricula offered in Schools of Home Economics at the university level. Associated with this growth has come pressure in some circles for a name change for the field in order to convey this broader occupational prespective. Whereas, home economics traditionally has emphasized the subject areas of food, clothing, home care and family life, today curricula in such areas as dietitics, nursing, consumer affairs, family services and fashion merchandising are available. Occupations currently exist for which specialized preparation in home economics as broadly conceived is desirable and often required (ibid).

In 1970 there were more than 120,000 persons employed in home economics occupations throughout the U.S. This number included nearly 70,000 teachers, 33,000 dietitians, 7,000 persons employed by private business firms and 5,300 specialists in some aspect of the Cooperative Extension Service. Approximately 16,000 home economists are needed each year to fill new or existing positions in this country alone for which home economics training is necessary. (Odland, 1975)

Purpose

This paper considers the student population served by the diversity of career oriented curricula available in home economics at one 1862 Land Grant university. The purpose is to provide a preliminary overview of home economics students in the South. A prime question addressed concerns the extent to which home economics students represent a single homogeneous grouping or a number of somewhat heterogeneous groupings associated with different types of curricula (majors). Correlary questions are whether there are identifiable background characteristics that appear to differentiate students enrolled in various home economics programs; and whether there exist different family and career plans among students choosing various home economics majors?

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Sample Design

During Spring Quarter of 1977, a mailed questionnaire was sent to a systematic random sample of home economics students. Because of the truncated time frame associated with the 10 week quarter, the population was defined as all undergraduate students enrolled in the School of Home Economics the previous quarter (Winter 1977). Adjusted enrollment figures provided by the Registrar revealed 638 students matriculating in 13 curricula offered within three administrative departments, Table 1.

From this population a sample was selected employing a two stage procedure. First, a 15 percent sample was selected consistant with a regional sampling design. Second, a supplimental 43 percent sample was selected to generate a sample of sufficient size to allow for independent analysis of the students attending this university. A sample frame consisting of 376 student names and addresses was developed, representing 58.9 percent of the population.

Data Collection

As a part of a regional research effort, the procedures followed in the collection of data were standardized across all universities. The questionnaire was designed for a mailed survey. It contained a minimum of open-end questions. The different content areas included were those pertaining to the students social origins; high school, college and work experiences; life goals; and attitudes.

Data collection proceeded in the following manner. A first mailing including a copy of the questionnaire, a cover letter from the Regional Project Director and return addressed and stamped envelope were mailed to each student just prior their return to campus at the beginning of Spring Quarter. Completed and returned questionnaires were monitored on a daily basis. At the end of three weeks a second copy of the questionnaire, a new letter from the Regional Project Director, and another return addressed and stamped envelope were mailed to nonrespondents as of that date. Three weeks later a third communication, in the form of a postcard from the local project leader was sent each nonrespondent. One week later, a special letter was sent by the Dean of Home Economics urging nonresponding students to complete their questionnaires, or if misplaced, to stop by the Dean's office to obtain a replacement copy.

Usable questionnaires were eventually obtained from 252 students or 67 percent of the original sample and 39.5 percent of the Winter Quarter enrollment. A check of the sample frame against the official Spring quarter registration figures indicated a number of students who had failed to return to school or who had transferred out of Home Economics. Adjusting for this loss provided a response rate of approximately 75 percent.

Findings

Parents' Education

The educational attainment of these parents differed considerably for mothers and fathers, Table II. More than half the fathers (52%) had completed college and one fifth of these (21%) had completed some form of graduate training. Generally, the mothers education level was more modest, as only a little more than one-fourth (28%) had completed college. The most common attainment level was to have completed their education with high school graduation. Only 11 percent of the fathers and 8 percent of the mothers had failed to complete high school.

Taken individually by curricula, fathers of nursing science (NS) majors were the best educated, with two-thirds (66%) having college or graduate degrees and no father of an NS major having less than a high school education. The second and third highest levels of educational attainment were found among fathers of fashion merchandising (FM) and family child service (FCS) majors. The lowest educational level was found in the nutrition and foods (NF) curricula, where only one-third of the fathers had graduated from college. The proportion of fathers with a high school educational or less ranged from a low of 19 percent for NS to a high of 39 percent for nutrition and foods (NF) majors.

Educational attainment for mothers of students enrolled in the various home economics curricula revealed the greatest variability among mothers of family and child service (FCS) majors. Mothers in this grouping tended toward the extremes as 13 percent had not graduated from high school while almost half (47%) had completed college. Only mothers of family and child development (FCD) majors were less likely to have completed high school and only mothers of food service (FSA) and dietetics (CDP) majors had a similarly high proportion of mothers who graduated from college.

The educational levels of fathers and mothers were most consistent among students in nutrition and foods (NF) where one-third of both had completed college. Even higher proportions of both parents had college degrees among family and child service (FCS) and food service and dietetics (FSA & CDP) majors. Disparity between the educational attainments of fathers and mothers was smallest for student enrolled in curricula characterized by mothers with high levels of education. The greatest disparity in parental education levels was observed for parents of nursing science (NS) majors. With few exceptions, fathers were twice as likely as mothers to have completed college.

Parent's Occupation

Fathers of the majority of home economics students were in white collar occupations, Table III. Professional and technical occupations accounted for

36 percent and proprietary, managerial and administrative occupations accounted for an additional 30 percent. Only a small proportion of the fathers (7%) were farmers or farm managers.

Mothers, on the other hand, were reported as homemakers or housewives by more than half (52%) the students. Of those mothers who were employed, 44 percent (21% of total) were in white collar professional or managerial occupations. However, the largest proportion of employed mothers (52% or 27% of total) were in clerical type jobs.

Comparison of the parents occupational background as it relates to the students choice of a home economics major revealed several differences. One observation was the somewhat greater attraction of nutrition and foods (NF) and food service (FSA) and dietetics (CDP) majors for students whose fathers were farming. Fathers with professional occupations were fewest among nutrition and foods (NF) majors (17%) and most prominent among fasion merchandise (FM) majors (46%). Four other majors exhibited proportions showing 40 percent or more of the fathers in professional occupations.

Differences in the occupational characteristics of mothers were also observed among curricula. Mothers of students in consumer affairs (CA) were most likely to be housewives, while mothers of family and child services (FCS) majors were least likely to be housewives and most likely to be professionally employed.

Residence

Students reported the type of area in which each of their parents had lived most of their childhood. Urban areas were defined as any local having a population of 10,000 population and on farms. Rural residence included areas with less than 10,000 population and on farms. Parents of these home economics students were reared about equally (47% of fathers and 48% of mothers) in urban and rural environments, Table IV.

Certain curricula did reflect differences in parental residential experience, however. Students in food services (FSA) were more likely to have fathers who had been reared in rural areas; whereas, family and child development (FCD) majors were most likely to have urban reared fathers. The pattern for mothers' childhood residence showed nurtition and foods (NF) and family and child service (FCS) majors most likely to have rural reared mothers, while mothers of nursing science (NS) majors were most likely (63%) to be urban reared.

A test for residential consistency among parents revealed that 36 percent of the parents were both reared in rural areas and 42 percent in urban areas. Thus, only 22 percent of the parents had contrasting residential experiences. No attempt was made to test for residential consistency across the various home economics curricula.

Childhood Residence of Students

Using the same measure of residence as above, students indicated the type of place in which they had lived most of their lives. More than three quarters (78%) of these home economics students reported that they had grown up in urban environments, Table V. The largest single proportion (33%) was reared in medium sized cities in the 50,000 to 500,000 population range. The second largest proportion (27%) was reared in small cities of 10,000 to 50,000 people. Only 12 percent had lived a major part of their lives in the open country or on a farm.

Considering the distribution of students across curricula, the proportion of rural residents was highest (43%) among students majoring in consumer affairs (CA) and most metropolitan (places larger than 50,000 population) for family and child service (FCS) majors. Students enrolled in nursing science were virtually all (90%) from urban environments.

Selected Student Attitudes

A number of attitudinal items were included in this study. These dealt with concerns about female sex-roles and the competing demands of traditional family patterns versus the personal needs for individuality and self-sufficiency through a career. In all, data were available for ten attitudinal items relating to various aspects of female sex-roles. Response patterns indicating the proportion of students agreeing with the particular attitude expressed are reported in Table VI.

The first statement was that "Women in college are more concerned with getting a husband than with preparing for a career." This highly stereotyped and somewhat chauvinistic statement was agreed with by only one-fifth of these students. Wide variation existed in the prevalence of this attitude among students in the different curricula. Students in nutrition and foods (NF) and family and child services (FCS) were most likely to agree (38% and 33%, respectively) while students in consumer affairs (CA) were least likely to agree (10%).

General agreement (83%) was found among these students with regards to the statement that "the husband and wife should be equal partners in marriage." This is clearly consistent with a growing cultural trend within American society. Variation in the extent to which this attitude characterizes students in different curricula ranged from a low of 75 percent in food service administration and dietetics (FSA & CDP) to a high of 100 percent in nutrition and foods (NF) majors.

The statement that "it is alright for a woman to work but her real fulfillment in life comes from motherhood" was endorsed by only one-third (32%) of these students. Fashion merchandizing (FM), home equipment (HEQ), and interior furnishings (IFE) majors were least agreeable with this position, as only 20 percent held such an attitude. In contrast, more than half (53%) of the students in family and child services (FCS) indicated motherhood was more important than an occupation.

One attitude on which nearly unanimous agreement was recorded involved the statement that "a woman who does the same work as a man should receive equal pay." Ninty-six percent agreed with this point. Minor variation existed among specific majors. These ranged from 91 percent among consumer affairs (CA) and nursing science (NS) majors to 100 percent among students in several majors.

Just the opposite pattern but consistent attitude was found concerning the statement "I would feel uncomfortable if my supervisor at work were a woman." Very few students (only 6 percent) felt that a woman supervisor would be a problem. Objection to a woman supervisor was least among home management (HM & HME), family economics (FE) and fashion merchandising (FM) majors and most among family and child development (FCD) and nursing science (NS) majors.

The vast majority of home economics students believed that "women are capable of performing as well as men at work outside the home." Three-fourths (77%) held this attitude. Majors in food service administration (FSA), dietetics (CDP) and nursing science (NS) were least agreeable with this position whereas almost 90 percent of the students in nutrition and foods (NF) and consumer affairs (CA) agreed.

More than half of these students (59%) supported the attitude that "it's alright for women to work full-time even though their children are in school." Considerable variation existed among students in the various curricula on this attitude. Only 43 percent of those in home equipment (HEQ), interior furnishing (IFE), food service administration (FSA) and dietetics (CDP) compared to a high proportion (73%) of family and child service (FCS) majors agreed with this statement.

Approximately one-fifth (22%) of these home economics students felt that "women should work full-time only before they have children." Students most frequently agreeing with this statement (29%) were in home management (HME & HM), family education (FE) and nursing science (NS) curricula. Only nine percent of these students in consumer affairs (CA) and foods and nutrition (NF) responded favorably.

A small proportion of home economics majors (13%) agreed that "most agricultural occupations are unsuited to women." Expressed in a positive way, employment opportunities in agriculture are not viewed as appropriate for women by students in this non-agriculture discipline. By individual majors the greatest negativism was recorded among students in home management (HM & HME) and family economics (FE), followed by those in food service administration (FSA) and dietetics (CDP).

Finally, the general statement that "there are good career opportunities in agriculture" elicited a favorable response from almost two-thirds of these students (63%). The range of favorable attitudes by major revealed the greatest agreement among students in food service administration (FSA) and dietetics (CDP) followed by those in family and child services (FCS). On the other hand, only half the family and child development (FCD) majors saw agriculture as a field of opportunity.

Conclusions

The purpose of this analysis was to consider the nature and extent of within and across group variability among students enrolled in a variety home economics (majors) offered at one 1862 land-grant university. Findings were presented for a few key background characteristics: parents' education and occupation and parents' and students' childhood residence. These revealed that home economics students at this institution represented a heterogeneous population, but at the same time, a population that tended to have stronger rural than urban roots. Associated with this was found a distinct difference in the educational and occupational status of many of the parent dyads. Fathers were generally better educated thatn mothers and were more likely to be the sole money earners. This could cause an intergeneration transfer of rural values concerning the appropriate role of the married woman. Additional analysis may be needed here to determine whether rural and urban parents differ equally with regards to educational and occupational status.

Heterorgeneity was observed also on a variety of student attitudes. Although several attitudes reflected virtually complimentary positions, there were a number of content areas involving sex-role and career related concerns that reflected the existence of considerable lack of consensus among home economics students. There was an undercurrent of traditional sex-role attitudes consistent with a rather traditional and rural oriented population. Again, further analysis needs to be undertaken to determine the extent to which these attitudes are reflections of the pre-college socialization in rural versus urban areas, or the extent to which they reflect attitude patterns among students exposed for different lengths of time to the socializing college environment.

Finally, we must conclude that some selectivity in recruitment to the various home economics curricula does occur. Table VII attempts to rank each curricula in terms of the proportion of students having a particular characteristic on each of the seven descriptive variables considered. Procedurally, the responses for each variable were combined into two categories and the frequency in one of the categories compared across nine curricula. The curricula with the highest frequency for each category was ranked 1 with all others given their respective rank until all curricula had a rank for that characteristic. One rank was obtained for each of the seven descriptive variables. These ranks were then summed for each curricula group and divided by the number of curricula to determine a mean rank.

Although no particular curricula or group of curricula emerged as consistently polar or unique types, there were several that tended to cluster around one or the other extreme. Students majoring in fashion merchandising (FM) tended to cluster at one extreme (rank of 5.2) which indicated an urban environment and high socioeconomic status. Closely following are the curricula of home management (HM, HME), Food Service Administration and Coordinated Dietetics Program (FSA, CDP) and Nursing Science (NS) with each receiving ranks of 4.8, 4.8, and 4.9, respectively. In contrast, students majoring in consumer affairs (CA) and nurtrition and foods (NF) were at the other extreme (ranks of 2.1 and 2.4). These ranks indicated a disproportunate number of students from a rural environment with lower socioeconomic status relative to students in other curricula.

Variability in attitudes among majors revealed a similar pattern. Fashion merchandising (FM) majors tended to hold the most "liberal" attitudes regarding sex-roles for women and to hold attitudes one would consider most appropriate to a career goal. Family oriented curricula, on the other hand, were more likely to attract students with stronger family oriented attitudes.

References

Auburn University Bulletin: 1977-1978, Auburn University, V. 72, N. 4 (April 1977).

Cownan, Donna, Professional Value Orientation of Home Economics. Pennsylvania: Albright College Printing Office, 1973.

Lippeatt, Selma, F. and Helen I. Brown, Focus and Promis of Home Economics-A Family Oriented Perspective. New York: The MacMillan Co., 1965.

Hoeflin, Ruth, Careers in Home Economics. The MacMillan Company, 1970.

Humpreyville, Theresa R., Futures for Home Economists. New Jersey: Printice-Hall Inc., 1973.

Lee, Jeanette A. & Paul L. Dressel, Liberal Education and Home Economics. New York City: Bureau of Publication, Teachers College, Columbia University, 1963.

Odland, Laura M. and Mary Helen Sebik, Perspectives for the Home Economist Professions. Atlanta: Southern Regional Education Board, 1975.

Phillips, Velma, Home Economics Careers for You. New York: Harper & Brothers Publishers, 1957.

TABLE 1

STUDENT ENROLLMENT FIGURES AND SAMPLE SIZE BY HOME ECONOMICS DEPARTMENTS AND CURRICULA, SPRING QUARTER, 1977

Depts. & Curr.*	Enrolled	Sampled		Responded	
		Number	Percent of enrolled	Number	Percent of enrolled
Consumer Affairs					
CA	47	31	65.9	21	67.7
HEQ & IFE	89	52	58.4	35	67.3
FM	138	88	63.8	56	63.6
HmE, Hm, FE	37	24	64.9	21	87.5
Total	306	195	63.7	133	68.2
Family & Child Dev.					
FCD	126	67	53.2	49	73.1
FCS	48	32	66.7	15	46.9
Total	174	99	56.9	64	64.6
Foods & Nutrition					
FSA & CDP	34	16	47.1	16	100
NS	59	42	71.2	21	50
NF	60	24	40	18	75
Total	153	82	53.6	55	67
TOTAL	638	376	58.9	252	67

* Descriptions of the curricula acronyms are provided in the Appendix.

TABLE II

EDUCATIONAL LEVELS OF FATHERS AND MOTHERS BY STUDENTS' HOME ECONOMICS CURRICULA

Education Levels	Home Economics Curricula									
	CA	HEQ,IFE	FM	HME,HM,FE	FCD	FCS	FSA,CDP	NS	NF	TOTAL
	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -	percent - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -
Father										
Less than H.S.	15.0	5.9	13.0	14.3	14.3	6.7	18.8	0.0	5.6	10.9
H.S. Graduate	25.0	14.7	11.1	14.3	10.2	20.6	18.8	19.0	33.3	16.1
Less than college	10.0	32.4	16.7	23.8	20.4	20.0	6.3	14.3	27.8	19.8
College graduate	45.0	32.4	35.2	14.3	36.7	33.3	25.0	28.6	27.8	32.3
Graduate work	5.0	14.7	24.1	33.3	18.4	20.0	31.1	38.1	5.6	21.0
Total Number	20	34	54	21	49	15	16	21	18	248
Mother										
Less than H.S.	5.0	8.8	5.5	4.8	17.0	13.3	0.6	5.0	5.6	8.1
H.S. Graduate	50.0	26.5	38.2	38.1	27.7	13.3	31.3	35.6	38.9	33.3
Less than college	30.0	38.2	27.3	38.1	25.5	26.7	25.0	40.0	22.2	30.1
College Grad--Post Grad	15.0	26.5	29.1	19.0	29.8	46.7	43.8	20.0	33.3	28.5
Total Number	20	34	55	21	47	15	16	20	13	246

TABLE III

FATHERS' AND MOTHERS' OCCUPATION TYPES OF FATHERS AND MOTHERS BY STUDENTS' HOME ECONOMICS CURRICULA

Occupation Types	Home Economics Curricula									
	CA	HEQ,IFE	FM	HME,HM,FE	FCD	FCS	FSA,CDP	NS	NF	TOTAL
	percent									
Father										
Professional, technical and kindred workers	23.8	40.0	46.4	42.9	30.6	40.0	40.0	33.3	16.7	36.3
Proprietors, managers and administrators (except farm)	38.1	20.0	33.9	23.8	36.7	26.7	33.3	38.1	16.7	30.7
Sales, Clerical, Craftsmen Operatives, Laborers and service workers	28.6	37.1	19.6	23.8	26.5	26.7	13.4	19.0	44.5	26.4
Farmers and Farm managers	9.5	2.9	0.0	9.5	6.1	6.7	13.3	9.5	22.2	6.8
Total Number	21	35	56	21	49	15	15	21	18	251
Mother										
Professional, technical managers, and administrators	9.5	14.3	27.3	19.0	16.3	33.3	25.0	23.8	27.8	21.1
Sales, Clerical, Craftsman and service workers	23.8	28.6	29.1	23.8	28.6	33.3	25.1	19.1	28.8	27.1
Housewife	66.7	57.1	43.6	55.1	33.3	33.3	50.0	57.1	44.4	51.8
Total Number	21	35	55	21	49	15	16	21	18	251

TABLE IV

RURAL-URBAN CHILDHOOD RESIDENCE OF FATHERS AND MOTHERS BY STUDENTS HOME ECONOMICS CURRICULA

Childhood Residence	Home Economics Curricula									
	CA	HEQ,IFE	FM	HME,HM,FE	FCD	FCS	FSA,CDP	NS	NF	TOTAL
	percent									
Father										
Rural	55.0	40.0	42.9	42.9	38.8	53.3	62.5	55.0	61.1	46.8
Urban	45.0	60.0	57.1	57.1	61.2	46.7	37.5	45.0	38.9	53.2
Total Number	20	35	56	21	49	15	16	20	18	250
Mother										
Rural	45.0	51.4	47.3	42.9	49.0	53.3	43.8	36.8	55.6	47.6
Urban	55.0	48.6	52.7	57.1	51.0	46.7	56.3	63.2	44.4	52.4
Total Number	20	38	55	21	49	15	16	19	18	248

TABLE V

RESIDENCE OF HOME ECONOMICS STUDENTS BY CURRICULA

	Home Economics Curricula									
Residence	CA	HEQ,IFE	FM	HME,HM,FE	FCD	FCS	FSA,CDP	NS	NF	TOTAL
	percent									
Farm or ranch	9.5	17.1	3.6	14.3	4.1	13.3	0.0	4.8	11.1	7.9
Country Outside	19.0	2.9	3.6	0.0	4.1	0.0	6.3	0.0	0.0	4.0
Town or Village	14.3	14.3	8.9	9.5	10.2	13.3	6.3	4.8	11.1	10.3
Small City	19.0	22.9	25.0	28.6	28.6	33.3	37.5	38.1	16.7	27.0
Medium City	28.6	25.7	33.9	38.1	36.7	6.7	31.3	33.3	50.0	32.5
Metro City	9.5	17.1	25.0	9.5	16.3	33.3	18.8	19.0	11.1	18.3
Total Number	21	35	56	21	49	15	16	21	18	252

TABLE VI

PERCENTAGES OF STUDENTS AGREEING OR STRONGLY AGREEING ON TEN ATTITUDUAL STATEMENTS BY HOME ECONOMICS CURRICULA

	Home Economics Curricula									
Attitude Items	CA	HEQ, IFE	FM	HME, HM,FE	FCD	FCS	FSA, CDP	NS	NF	TOTAL
	percent									
Women in college are more concerned with getting a husband than with preparing for a career.	9.5	17.1	14.3	28.6	18.8	33.3	18.8	20.0	37.6	19.7
The husband and wife should be equal partners in the marriage.	90.4	91.4	94.6	76.2	79.1	86.1	75.1	95.2	100	87.9
A woman who does the same work as a man should receive the same pay.	90.5	97.2	96.4	100.0	98.0	100	100	90.5	93.8	96.3
I would feel uncomfortable if my supervisor at work were a women.	4.8	8.6	1.8	0.0	10.4	6.7	0.0	9.5	6.3	5.6
Women are capable of performing as well as men at work outside the home.	85.7	79.4	82.1	76.2	70.8	80.0	62.5	61.9	87.6	76.7
It is alright for a woman to work but her real fulfillment in life comes with motherhood.	33.3	20.0	19.7	42.9	43.7	53.4	25.1	38.1	25.1	31.7
It's alright for women to work fulltime even though their children are in school.	60.0	42.8	62.5	71.4	60.5	73.4	68.3	42.8	56.3	58.9
Women should work full-time only before they have children.	9.5	25.8	21.4	28.6	27.1	13.4	20.0	28.6	8.6	22.1
Most Agriculture occupations are unsuited to women.**	9.5	5.8	12.7	33.4	14.6	6.7	25.1	5.0	12.6	13.4
There are good career opportunities in agriculture.	61.9	60.7	63.6	66.6	50.0	73.3	81.3	66.6	68.9	63.0
Total Number	21	35	56	21	48	15	16	21	16	249

* Percentages are of those that agreed or strongly agree

** 45.1% responding were listed as undecided

TABLE VII

RANKING OF PARENTS' EDUCATION, OCCUPATION, CHILDHOOD RESIDENCE AND STUDENTS RESIDENCE BY CURRICULUM FROM LOWEST TO HIGHEST PERCENTAGE*

	CA	HEQ IFE	FM	HME,HM,FE	FCD	FCS	FSA,CDP	NS	NF
Fathers' educational level Col. grad. work	4	2	8	3	6	5	7	9	1
Mothers' educational level Col. grad. work	1	7	4	5	2	9	8	6	3
Father's Occupation Professional, technical	2	6	9	8	3	6	6	4	1
Mother's Occupation Employed	1	3.5	7	2	5	9	6	3.5	3
Father's Childhood resid. Urban	3.5	8	6.5	6.5	9	5	1	3.5	2
Mother's Childhood resid. Urban	6	3	5	8	4	2	7	9	1
Student's Residence Urban	1	2	7	3	6	4	8	9	5
Average Ranking, occupation & urban residence	2.1	3.5	5.2	4.8	3.9	4.4	4.8	4.9	2.3

*Lowest ranking of 1 reflects most rural and relatively lower socioeconomic status and the highest ranking (9) indicates more urban and relatively higher socioeconomic status.

Appendix

Consumer Affairs (CA)
Includes the application of knowledge in such varied fields as textile and apparel design, production and promotion, textile science, fashion journalism and consumer-producer relations.

Fashion Merchandising (FM)
Prepares students for positions as buyer or assistant buyer, comparison shopper, fashion stylist or coordinator, merchandise manager, fashion promoter, or store owner-manager.

Interior Furnishings and Equipment (IFE)
Prepares the student for position in retailing, styling, manufacturing or public utilities.

Family & Child Development (FCD)
Enables the student to do professional work with families and individuals of all ages.

Family & Child Services (FCS)
Provides students with the relevant knowledge and motivation to enter employment in human service occupations and professions.

Home Management (HM)
Provides a broad general education in Home Economics. Professional preparation for positions in the Cooperative Extension Service, home service and other areas of business.

Family Economics (FE)
Preparation for professional positions that deal primarily with economic problems of families, such as credit counseling, housing authorities, social service agencies, business and industry.

Food Service Administration (FSA)
Prepares students to manage food service operations in educational institutions, hospitals, government, business and industry.

Nutrition and Foods (NF)
The major areas of concentration include dietetics, nutrition and experimental foods with minors in food science, teaching, chemistry, biology, journalism, radio, TV, etc.

Coordinated Dietetics Program (CDP)
When completing this program (with clinical experiences), the student is eligible for registration as a dietetion by the American Dietetics Association.

Pre-Nursing (NS)
Provides nursing science majors with a basic two year program. When completed, students will be assisted with transfer to an accredited school of nursing.

Racial Composition of Schools and Mobility Projections of South Carolina Black Youth*

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Despite a number of studies in recent years concerning mobility attitudes and the racial composition of schools, conflicting results have prevented a clear understanding of this relationship. (Falk, 1975; St. John, 1975, Hammer, 1971; Falk and Cosby, 1974) Our paper will discuss this relationship as it pertains to a representative sample of South Carolina, black youth. The question to be examined is whether or not the racial composition of the school attended affects black students' educational expectations.

REVIEW OF LITERATURE

Several conflicting viewpoints have evolved concerning the effects of school types (racial composition, desegregated vs. segregated, etc.) on student aspirations, expectations and attainment. Christopher Jencks (1972), for example, suggests that there is very little difference in attitudes and attainment between students in segregated and desegregated schools, when family background and achievement test scores are held constant. However, evidence from other studies, including the Colemen Report (1966), indicates that a relationship exists between the percentage of white enrollment and individual performance, but that the differences can more accurately be explained by the background characteristics of the entering students.

Other researchers contend that the racial composition of schools does directly influence expectations and aspirations, though they do not always agree on the direction of the relationship. In some studies (Cohen, et. al., 1972; St. John and Smith, 1969; Veroff and Peele, 1969) achievement of blacks in desegregated schools has increased while aspirations were lowered. While other studies (Linsay and Gottlieb, 1969; Brookover and Erickson, 1969) have shown a rise in black aspirations and expectations associated with an increase in white enrollment in schools.

As this paper will introduce a time dimension into the analysis of desegregation, it is important to note the efforts of Kuvlesky and Stanley (1976) who examined historical change in the status projections of East Texas high school sophomores. They compared 1966 and 1972 students from the same set of schools, located in very rural, low income, black counties. An overall drop in educational aspirations and expectations over the time period was found, with the largest difference occurring for blacks. The authors mention the possibility of forced racial integration as having a substantial influence on this trend. Virlyn Boyd (1974) found similar change patterns for his samples of 1967 and 1973 sophomores in South Carolina.

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The present paper will examine not only the static differences between types of schools, but will assess the effects of the desegregation process over time on mobility projections. Using data from black sophomores in 1967 and 1973 from high schools across South Carolina, the author will focus specifically on the relationship between educational expectations and the racial composition of schools. The effects of sex, socio-economic status, and rural/urban residence will be introduced to elaborate this relationship.

The study population is drawn from a wide range of racially mixed school environments (10 schools with 18% to 95% black enrollment in 1973). The author will compare the educational expectations of 1973 sophomores to those in 1967 (before desegregation) enabling her to assess the direction and magnitude of historical change for students attending schools of different racial mixtures. Unlike many previous studies utilizing unrepresentative samples, this paper will report from a cross-section of South Carolina black youth.

Our approach is consistent with St. John (1975) when she stresses the necessity of comparing students within versus between racial groupings to insure equivalence of subjects in this type of research. As children within racial groupings differ in terms of achievement levels, genetic makeup, home environments, and socioeconomic backgrounds, it is necessary to neutralize these influences to isolate school effects. Therefore, the focus will be only upon black sophomores.

RESEARCH DESIGN AND METHODS

The analytic approach is twofold. First, the author will examine the relationship between school racial composition and educational expectations of black sophomores in 1973 and 1967. The purpose is to assess whether or not differences in educational expectations exist among students attending different types of schools (as defined by their racial mixtures) at these two time periods. Further, to more fully probe the effect of racial composition, a comparison of the change in expectations among students from the same schools over the two contacts will be made.

Data were collected by questionnaires administered to groups of entire tenth grade classes, or in tenth grade English classes. No attempt was made to contact students who were absent on the day of the data collection. Data collection for both contacts was conducted by Virlyn Boyd -- Clemson University, and every attempt at uniformity of procedures between time periods was made. The analysis of the data will utilize percentage distributions, chi square and gamma when useful, to assess the data for each contact, and the magnitude of change between contacts.

STUDY POPULATION

In 1967 a representative sample of South Carolina high school sophomores was drawn which included 42 randomly selected high schools in 26 counties. The sample was stratified by race of students and size of the tenth grade class in 1965-66. For the present study, a subsample of 10 schools (from the original 42) from eight counties was chosen that matched the schools chosen in 1973 to be representative of the original sample. The original 1973 sample included sixteen schools of which we will utilize only those common to our 1967 subsample (N=9).

The schools in the sample for this paper are from counties including a wide range of racial mixtures, rural/urban residence, population size, and levels of income which represent the different areas of South Carolina. The sample for 1967 includes 849 respondents, 45% male and 55% female; the 1973 sample has a total of 1026 cases with 49% male and 51% female.

STUDY VARIABLES

School Type was determined by the racial composition of the school based on the number of blacks in the sophomore class for each time period. Due to the introduction of varying degrees of desegregation between contacts, this composition may or may not have changed for each school. Schools were classified as having low (0-50%) or high (51-100%) black enrollment.

To assess students' Educational Expectation, the following question was asked in both 1967 and 1973: "What do you really expect to do about your education?" From a fixed set of six possible responses, three categories were derived: Low (High School graduation or less), Medium (technical training or junior college), and High (College graduate or more).

Residence was determined by responses to the following question: "Where have you lived most of your life?" Answers were coded as rural (Town or Village under 2500 or smaller) or urban (City over 2500).

Responses indicating Socioeconomic Origin were assessed by use of an abbreviated code similar to that of the U.S. Bureau of Census. The following question was asked of respondents: "What is the main job held by the major money earner of your home?" After deleting "housewife" and "nonearned income" categories, responses were recoded into two categories, blue collar and white collar.

ANALYSIS - 1973

The zero order relationship between school type and the educational expectations of black sophomores in 1973 is not clearly apparent, as indicated by the lack of percentage differences among cells and the extremely low association (gamma - .058) for these variables (Table 1).

When controls of sex, residence, and socioeconomic origin are introduced to elaborate the relationship between school type and educational expectations, we find the following patterns. Table 2 shows that females in both school types have higher expectations than males. While females in highly black schools have slightly higher expectations than those in highly white schools, these data suggest sex to have a stronger influence on expectations than school type.

When residence (rural/urban) was held constant the initial relationship of educational expectations and school type changed considerably under both conditions of residence but in a different manner under each condition (Table 3). Overall, blacks from rural areas evidence lower expectations than their urban peers. A slightly stronger relationship between school type and expectations appears under the condition of urban residence (gamme = .11-NS at .05 level), but this association disappears for rural students (.02). Still residence appears more influential than school type on the expectations of these youth as shown by gamma of -.22 (significant at .05 level).

There may be several reasons why the expectation-school type relationship is not apparent under the condition of rural. The category "rural" may contain a very heterogeneous mixture of people from those attending small country schools, to those living outside a city but attending a city school. Also, a uniformly low socioeconomic origin for all rural students may contribute to the suppression of the initial relationship of school type and expectations. Thus, this category may not allow for an accurate assessment of the influence of residence on the relationship under study.

Socioeconomic origin and educational expectations shows the strongest relationship overall (.35 - sign.) in the analysis, with small percentage differences between types of school for children of blue or white collar families (Table 4). In the white collar category, around 53 percent have high expectations compared to only 30 percent to 35 percent for blue collar children. If any relationship between school type and expectation can be described from this, it is that black students in the predominantly black schools have slightly higher expectations than their peers in predominantly white schools. However, these data support the conclusion that socioeconomic origin is more highly related to educational expectations than school type. One must take into account the high number of missing cases (262) when considering this analysis, however.

1967 DATA

Upon examining data from black sophomores in 1967 from the same schools studied in 1973, a somewhat different picture of the relationship of educational expectations and school type becomes apparent (Table 5). Any analysis of this data must consider the very small number of cases in the low black enrollment schools (N=80). Since this data was collected before desegregation took place, very few black students were enrolled in predominantly white schools. Though conclusions will still be drawn based on the data, they must be interpretted conservatively due to this factor. Furthermore, because of the extremely unequal marginals, gamma will not be used.

A comparison of percentages from Table 5 indicates a slight relationship between expectations and school type, in which black students in predominantly white schools have higher expectations than those in predominantly black schools. A comparison of percentage differences indicates this relationship is stronger than it was for students in 1973, and of the opposite direction (1973 students in predominantly black schools have higher expectations!). In both types of schools the largest percentage of students appear in the high expectation category, whereas in 1973 expectations are more evenly distributed into the three categories.

In Table 6 we see that both sexes display high educational expectations, but males in general have higher expectations than females.

Percentage differences indicate only a very slight relationship between school and expectations, and more clearly for females than males. Again the direction of the relationship means higher expectations for those in predominantly white schools. These data further contradict our findings for 1973 in which overall expectations are lower, sex and expectations are more highly related, females have higher overall expectations than males, and the slight association of school type and expectation reveal higher expectations by those in predominantly black schools.

As in 1973, residence proves to be influencial on the relationship of school type and educational expectations under both conditions of school type in 1967 (Table 7). As in 1973, rural students have lower expectations than their urban peers. A relationship between school type and expectation is apparent for both conditions of residence: blacks in predominantly white schools have slightly higher expectations than those in predominantly black schools. Interestingly, this relationship is in the opposite direction of that shown by the 1973 data. Overall, percentage differences between schools compared to those between residences, reveal both school type and residence to be equally influential in their effects on the educational expectations of black students.

Table 8 shows that in 1967 socioeconomic origin is not as overriding an influence on the school type -- expectation relationship as it is in 1973. A very small percentage of students come from white collar backgrounds (17 percent), but as expected, the students of these white collar families have higher expectations than blue collar students. The most pronounced effect is shown in the high expectation category of predominantly black schools.

The relationship of school type to expectation shows a different pattern under each condition of socioeconomic origin. Blue collar youth attending predominantly white schools, have higher expectations than their white collar peers. However, students from white collar families attending predominantly black schools expect to attain higher educational levels, than those in highly black schools. Apparently, socioeconomic origin and school type when combined, produce a conditional effect on educational expectations.

Thus, the data for 1973 and 1967 reveal two different patterns concerning the relationship of educational expectations and school type. Overall, the type of school one attends in terms of racial composition, seems far more influential in the determination of educational expectations in 1967 -- before desegregation, than in 1973. Though effects are weak for both contacts, in 1967 it is students in predominantly white schools who have higher expectations. Students in predominantly black schools have slightly higher expectations in 1973.

Other factors such as residence, socioeconomic origin, and sex proved influential on expectations, but in different patterns for each contact. Sex which has a considerable effect in 1973, is not very influential in 1967. Socioeconomic status has a stronger effect in 1973, but a conditional effect in 1967 which changes the strength of the original relationship between school type-expectation very little. Also, residence manifests greater influence on the educational expectations of students in 1973 than in 1967, though it produces an effect for both contacts.

The data seem to indicate that desegregation, which took place between 1967 and 1973 and included all of the schools in the analysis, has had an effect on the expectations of black youth. While expectations have been lowered overall, there seems to be a leveling effect between students of predominantly white and those of predominantly black schools. To further examine this possibility, we shall now compare the magnitude of change in expectations for different types of schools below.

COMPARISON OF CHANGE BETWEEN 1967 AND 1973

To further isolate the effect of desegregation, we can match and group schools by change in black enrollment over time. To simplify matters, only the zero order relationship of educational expectation and school type will be examined for each set of schools.

Table 9 displays an overall lowering of the educational expectations of students attending all schools (except those of high black enrollments at both contacts). However, the greatest magnitude of change occurs among schools that had low black enrollments in 1967. Schools which increased their black enrollment from low to high, display the most pronounced change of all schools in the study. Those schools with high black enrollments over both time periods show the least change (virtually no change at all).

The greater changes among 1967 "low" schools may be a reflection of short run tensions or disruptions caused by the desegregation process which involves the addition of blacks to predominantly white schools. The addition of whites to highly black schools is probably less disruptive a process. Thus, these changes in the "low" schools may level off when such initial tensions wear off. Such an interpretation is supportive of Jencks' view concerning the short-run effects of desegregation.

Results of Table 9 indicate that the process of historical change in educational expectations varies greatly (from 0.7 percent to 26.4 percent) with the change in black enrollment occurring over the two time periods. Comparing '67 "lows" and '67 "highs", schools whose black enrollments greatly change (from low to high or high to low) have more pronounced decreases in expectations, than those whose black enrollments remain either low or high over time. Furthermore, the magnitude of change for schools with low black enrollment at both contacts, might be inflated due to the wide range of enrollments within the "low" category (2 percent - 48 percent) over time. There is less variation in black enrollments for those schools in the "high" group.

CONCLUSIONS

Several conclusions seem apparent from the examination of the data for 1967 and 1973. First, the racial composition of the school attended (in 1967) seems to have a weak but definite effect on the educational expectations of black students by increasing expectations of those attending predominantly white schools. This trend appears to level off in 1973 where there is far less difference in expectations between those attending schools of different racial mixtures. At this point in time, other variables, i.e., sex, residence, and socioeconomic status take over as more influential factors in the determination of black youth's educational expectations. The effect on a black student of being in an overwhelmingly black or overwhelmingly white school environment as in 1967, might have produced school differences which dissipated in 1973 when after desegregation, most schools had more even mixtures of blacks and whites. As those few blacks in 1967 who attended predominantly white schools, had such extremely high expectations in relation to their peers, they had "farther to fall" to get in line with their peers in predominantly black schools.

This data does not uniformly support the views that high white enrollment or high black enrollment is the stimulus to higher expectations for blacks, as schools whose black enrollments went from high to low and visa versa both display a lowering of expectations over the two time periods. However, as this decrease is more pronounced for schools whose black enrollment increased, there may be slight support for the "exposure to white standards" theory of influencing black mobility projections.

The appraoch most supported seems to be that of Jencks', in that schools which in both time periods had high black enrollments, display the most stable environments of those examined for blacks. For students in these school situations, there are no short-run tensions experienced due to the desegregation process, as it does not effect their enrollments. There is also, no change in their expectations which in 1973 remained higher than any other group of schools. Other schools which were more affected by the desegregation process, and whose schools significantly changed their black enrollments, display reductions in expectations. (Again, those schools that remained "low" expereinced 40 percent changes in black enrollment though the coding scheme did not reflect them). Interestingly, this process has a sobering effect or a lowering of expectations for all schools despite the direction their black enrollments changed.

Thus, overall one can say, though the relationship is a complex one, this data supports the view that the desegregation process has at least short term effects on the educational expectations of black youth. In all cases where black enrollments dramatically change, expectations are lowered between 1967 and 1973. In the case where black enrollment is not affected by the desegregation process, expectations remain the same over both contacts. Further research extending this time frame may indicate whether these effects are in fact due to short run tensions, or more long term influences. Therefore, instead of studying desegregation in static terms of differences in the racial mixtures of schools, it may be more fruitful to examine the desegregation process as a change in racial enrollments over time, to better understand these differences in educational expectations.

TABLE 1. Educational Expectations by School Type - 1973 (Percentages)

Educational Expectations	School Type Low Black Enrollment	 High Black Enrollment	Total
Low	34.3	32.3	
Medium	32.1	30.4	
High	33.5	37.3	
Total	492	517	1009

TABLE 2. Educational Expectation by School Type by Sex - 1973 (Percentages)

	Sex				
	Male		Female		
	School Type		School Type		
Educational Expectations	Low Black Enrollment	High Black Enrollment	Low Black Enrollment	High Black Enrollment	Total
Low	38.9	34.0	30.4	30.6	
Medium	28.4	33.2	35.4	27.5	
High	32.8	32.8	34.2	41.9	
Total	229	259	263	258	1009

TABLE 3. Educational Expectation by School Type by Residence - 1973 (Percentages)

	Residence				
	Urban		Rural		
	School Type		School Type		
Educational Expectations	Low Black Enrollment	High Black Enrollment	Low Black Enrollment	High Black Enrollment	Total
Low	28.3	24.3	40.9	39.7	
Medium	34.8	32.1	28.6	28.8	
High	37.0	43.6	30.5	31.5	
Total	276	243	203	267	989

TABLE 4. Educational Expectations by School Type by Socioeconomic Origin - 1973 (Percentages)

	Socioeconomic Origin				
	Blue Collar		White Collar		
	School Type		School Type		
Educational Expectations	Low Black Enrollment	High Black Enrollment	Low Black Enrollment	High Black Enrollment	Total
Low	35.0	31.1	22.5	15.5	
Medium	35.0	33.4	25.0	31.3	
High	30.0	35.4	52.5	53.5	
Total	283	302	80	99	764

TABLE 5. Educational Expectations by School Type - 1967 (Percentages)

	School Type		
Educational Expectations	Low Black Enrollment	High Black Enrollment	Total
Low	13.8	22.1	
Medium	36.2	36.2	
High	50.0	41.7	
Total	80	760	840

TABLE 6. Educational Expectations by School Type by Sex - 1967 (Percentages)

	Sex				
	Male School Type		Female School Type		
Educational Expectations	Low Black Enrollment	High Black Enrollment	Low Black Enrollment	High Black Enrollment	Total
Low	22.2	20.7	9.4	23.3	
Medium	25.9	36.9	41.5	35.5	
High	51.9	42.3	49.1	41.2	
Total	27	352	53	408	840

TABLE 7. Educational Expectations by School Type by Residence - 1967 (Percentages)

	Residence				
	Urban School Type		Rural School Type		
Educational Expectations	Low Black Enrollment	High Black Enrollment	Low Black Enrollment	High Black Enrollment	Total
Low	12.9	21.6	14.6	23.4	
Medium	32.3	31.2	39.6	43.7	
High	54.8	47.2	45.8	32.9	
Total	31	468	48	286	833

TABLE 8. Educational Expectations by School Type by Socioeconomic Origin - 1967 (Percentages)

	Socioeconomic Origin				
	Blue Collar School Type		White Collar School Type		
Educational Expectations	Low Black Enrollment	High Black Enrollment	Low Black Enrollment	High Black Enrollment	Total
Low	15.2	22.8	4.3	10.5	
Medium	39.1	37.0	39.1	20.9	
High	45.7	40.2	56.5	68.6	
Total	46	495	23	86	650

TABLE 9. Educational Expectation by Year by School Type Changes (1967-1973)

	School Type Changes Between Contacts											
Educational Expectations	Low* 1967	Low 1973	Change	Low 1967	High* 1973	Change	High 1967	High 1973	Change	High 1967	Low 1973	Change
Low	23.5	37.5	+14.0	6.5	32.9	+26.4	26.0	25.7	- 0.3	18.7	28.0	+ 9.3
Medium	26.5	31.7	+ 5.2	43.5	28.5	-15.0	31.9	31.6	- 0.3	39.9	32.9	- 7.0
High	50.0	38.8	-19.2	50.0	38.6	-11.4	42.1	42.8	+ 0.7	41.4	39.1	- 2.3
Total	34	331		46	407		354	339		406	161	

* "Low" and "High" refer to low or high black enrollment.

REFERENCES

Armor, David J., "School and Family Effects on Black and White Achievement" in On Equality of Educational Opportunity, Mosteller, Frederick and Daniel P. Moynihan (eds.) Vintage Books, New York, 1972, pp. 168-229.

Boyd, Virlyn A., "Historical Changes in Educational Aspirations of South Carolina High School Students, 1967-1973", paper presented to Rural Sociology Section of Southern Association of Agricultural Scientists, Memphis, Tennessee, February 1974.

Brookover, Wilber and Edsel L. Erickson, Society, Schools, and Learning, Allyn & Bacon, Inc., Boston, 1969.

Cohen, David K., Thomas F. Pettigrew, Robert T. Riley, "Race and the Outcomes of Schooling" in On Equality of Educational Opportunity, Mosteller, Frederick and Daniel P. Moynihan (eds.), Vintage Books, New York, 1972, pp. 343-370.

Cosby, Arthur G., "Occupational Expectations and the Hypothesis of Increasing Realism of Choice", Journal of Vocational Behavior, Vol. 5, No. 1, August 1974, pp. 53-65.

Crain, Robert L., "School Integration and the Academic Achievement of Negroes." Sociology of Education, 1971, Vol. 44, (Winter), pp. 1-26.

Falk, William W., "School Desegregation, Mobility, Attitudes, and Early Attainment of Rural, Black Youth", unpublished dissertation, Texas A & M, August 1975.

Falk, William W. and Arthur Cosby, "School Desegregation and The Educational Projections of Rural, Black Youth", Rural Sociology Vol. 39, No. 1, Spring 1974, pp. 28-41.

Falk, William W., Arthur G. Cosby, and Bonnie S. Burris, "The Occupational Projections of Rural Blacks from Segregated & Desegregated Schools", paper presented at the 1974 Southwestern Sociological Association Annual Meetings, Dallas, Texas, March 1974.

Hammer, Eliot R., "The Effect of School Racial Composition on Mobility Perceptions of High School Students in South Carolina", unpublished Master's Thesis, University of Georgia, 1971.

Jencks, Christopher, Marshall Smith, Henry Aleand, Mary Jo Baue, David Cohen, Herbert Gintis, Barbara Heyns, Stephan Michelson, Inequality: A Reassessment of the Effect of Family and Schooling in America, Basic Books, Inc., New York, 1972.

Kuvlesky, William P. and William D. Stanley, "Historical Change in the Status Aspirations and Expectations of Rural Youth: A Racial Comparison", paper presented at annual meetings of Texas Academy of Science, College Station, Texas, March 4-6, 1976.

McLean, Edward L., "General Population Characteristics - South Carolina 1960-1970", Clemson University Cooperating with USDA Extension Service, Clemson, S. C., 1972.

Sewell, William H., Archibald O. Haller, and Alejandro Portes, "The Educational and Early Occupational Attainment Process", American Sociological Review, Vol. 34, February 1969, pp. 82-92.

Slocum, Walter L., "Career Aspirations, Decisions and Attainments", Occupational Careers, Aldine Publishing Co., Chicago, Illinois, 1974, pp. 239-298.

St. John, Nancy H., School Desegregation Outcomes for Children, John Wiley & Sons, New York, 1975.

St. John, Nancy H. and M. S. Smith, "School Racial Composition, Achievement, and Aspiration", unpublished paper, Graduate School of Education, Harvard University, 1969.

Thomas, John K., Arthur G. Cosby, "Early Achievement Patterns of Southern Males: Racial Profiles of Status Attainment and Mobility Attitudes", paper presented at Rural Sociology Section of SAAS meetings, 1975.

U. S. Bureau of the Census, 1970 Census of Population: Characteristics of the Population - South Carolina, U. S. Dept. of Commerce.

Veroff, J. and S. Peele, "Initial Effects of Desegregation on the Achievement Motivation of Negro Elementary School Children", Journal of Social Issues, Vol. 25, No. 3, Summer 1969, pp. 71-91.

Section D

RURAL AND URBAN CULTURE

"An Overall County Quality of Living Index." Charles Cleland, University of Tennessee and Y. N. Lin, University of Maryland.

AN OVERALL COUNTY QUALITY OF LIVING INDEX[*]

by

C. L. Cleland and Y. N. Lin[**]

The university president who said in his charge to the newly appointed self-study committee that he wanted the final committee report on the state of the university to be brief, preferably a single number, illustrates the type of effort being made in the search for a quality of living index that can be applied to an entire community, state or nation. It is the search for a single number that can sum up the well-being of all of the people living in that area (political unit). It is the equivalent of the Gross National Product developed by the economists to represent the economic well-being of the nation but meant to apply to all of the aspects of living and not just the economic.

The value of such an indicator would be in its providing an easily read and understood measure of general well-being which could be compared with times past or would permit comparison between political units (geographic areas). Such comparisons would provide political leaders and public officials, as well as the average citizen, with indications of the direction of change and with the relative well-being of different jurisdictions. It would also help to avoid the piecemeal approach that tends to focus on improvement in a single area of need rather than on a balanced program of development.

The problems associated with the development of such an index are monumental. They start with questions as to what really affects the quality of living of people living in a given area. They go on to deal with the question of whether such a measure should be basically a subjective, attitudinal measure or whether it should be strictly objective and thus more strictly comparable between different times and places. Concern is then with the availability of the needed information and the technical problems of finding reasonable ways of summarizing the various parts and combining them to achieve a satisfactory index value.

What Really Affects the Quality of Living?

The question of what effects the quality of living has been asked by a number of researchers and the answers given have varied widely. In a cross-cultural effort Wilkening and Galeski concluded that both subjective and objective aspects of the socioeconomic environment must be taken into account.[1] A discussion of this issue is contained in the volume by Campbell, Converse and Rodgers including the criticisms of the use of both kinds of indicators.[2]

Suffice it to say here that a great many objective conditions and the subjective interpretations of those conditions can enter into the quality of the living of an individual. For different individuals the particular objective conditions that influence the quality will vary as will the subjective interpretation of those objective conditions. To find some measure which lumps all of the various individual outlooks into a single figure would appear to be virtually impossible.

The researchers involved in a recent study of the quality of life in the rural South arrived at a list of 20 areas which would likely have some effect on living quality about which the rural residents could be questioned. These included such concerns as the quality of the local government, politics, political organizations, schools, educational system, churches, civic organizations, recreational facilities, job opportunities, income and the transportation system. The list of areas included was not necessarily considered exhaustive but it was felt to include the most critical areas given the current state of development of the rural society in the U.S. South.

Data Source

The southern regional research project entitled "Rural Development and the Quality of Life in the Rural South" and designated S-79 was the source of the data for this study. The analysis is based on data from 29 counties in seven states which counties were considered to be low-income in 1950. Part of the data came from a survey of households in the open-country areas of these counties and the rest from the 1970 Census of Population for the respective states.

Index Construction

Basically the index is a weighted average of the ratings given to the twenty items included in the survey. The ratings of the items were obtained from the survey and a county average obtained for each. The respondents were asked to rate the current quality of each of the twenty areas indicating whether they felt they were poor, fair, pretty good, or very good and these responses were assigned weights of 1, 2, 3, and 4, respectively, for the purpose of arriving at a numerical average. These county averages were then multiplied by the number of people in the open-country areas of the county who were deemed to be most directly influenced by that particular variable. For example, for the variable "opportunities for young people," the average rating was weighted by the number in the open-country population who were between the ages of 16 and 24, while for the variable "public utilities," the rating average was weighted by the total number in the population since all would be directly influenced by the quality of the public utilities. The weights used are shown in Table 1.

The weighted averages for each of the twenty items were then summed over all items and the total divided by the sum of the population numbers used for the weighting. The resulting number was the overall county quality of living index value which could vary between 1.000 and 4.000. These values were used to order the 29 counties included in the study for the purposes of further analysis.

Other County Characteristics

Having arrived at a numerical value for the quality of living based on the subjective responses of the open-country population of these counties which had been low-income in 1950, the opportunity existed to see which county characteristics were statistically related. Since the overall study was concerned with development, it was felt that certain characteristics which were understood to be related to development should be associated with the index values. Without getting into an extended

TABLE I

WEIGHTS USED IN CONSTRUCTION OF OVERALL COUNTY QUALITY OF LIVING INDEX

	ITEM (Quality of)	WEIGHT (Number in population)
1.	Opportunity for education and training beyond high school	Number ages 19 through 24
2.	Situation and opportunities for young people	Number ages 16 through 24
3.	Job opportunities	Number ages 16 through 64
4.	Provision of good housing	Number all ages
5.	County government	Number all ages
6.	Local politics and political parties	Number ages 18 and over
7.	Income of people who work for wages	Number working outside household
8.	Agriculture and land use	Number ages 18 and over
9.	Physical environment	Number all ages
10.	Situation and opportunities for old people	Number ages 60 and over
11.	Medical care and health services	Number all ages
12.	Public utilities	Number all ages
13.	Roads and transportation services	Number all ages
14.	Recreational opportunities	Number ages 4 and over
15.	County as a place to live	Number all ages
16.	Real income	Number all ages
17.	Welfare program	Number ages 65 and over + Number in families with female head and one or more children under 18 + number disabled + Number in families where no adult is able to work
18.	Obedience to the laws	Number ages 16 and over
19.	Church and religious groups	Number all ages
20.	Public schools	Number ages 5 through 18

discussion of just what development is, let me describe some of the characteristics that the authors associate with the term.

Development is understood to involve improvement in the economic opportunities in the immediate area which results in improvement in the quality of the various services offered to the residents. It would also tend to reduce the out-migration of the young and possibly even attract some of the former residents to return. Development further would permit the residents to improve their own homes with equipment which would reduce the physical demands and boredom of everyday living and increase the opportunities for enjoyment and pleasure. It would also provide increased opportunities and desire for involvement outside the home.

With this understanding of development the following county characteristics (averages) were selected for possible association with the overall quality of living index: median family income, size of family, age of household head, age of homemaker, education of household head, education of homemaker, capability-of-adults-to-work index, dependency index, social participation of household head, social participation of homemaker, average of the social participation of the head and homemaker, leisure time participation of household members, Material Possessions Level of Living score, Communication Items Level of Living score, number of level of living items possessed, Anomia Scale score, county population size and the percent nonwhite in the county population. The last two were thrown in as after thoughts just to make sure something obvious hadn't been overlooked.

Where it was possible to obtain the information from the census, that was the source used. For the non-census data the information was obtained from the S-79 survey of the open-country households.

The Analysis

The data to be analyzed consisted of the applicable figures for twenty-nine southern counties. Some of the figures had very clear numerical backgrounds that permitted very precise mathematical interpretation, e.g., median family income. Other figures were based on subjective definitions and the mathematical interpretation was something less than crystal clear. In essence then we had a rather small number of observations and the distributions from which some of them came could not be considered normal.

The data clearly did not meet the basic assumptions underlying the more sophisticated correlational techniques. As a result a statistic was selected which made no assumptions about underlying distributions: rank order correlation (Spearman Rho). The results of the analysis are presented in Table II.

It would appear from the contents of Table II that we practically pulled a blank. Only one of the county characteristics was found to be statistically related to this measure of overall quality of living and nearly all of them had been selected because they were felt to be related to development in some way.

TABLE II

CORRELATION OF OVERALL COUNTY QUALITY OF LIVING INDEX WITH VARIOUS COUNTY CHARACTERISTICS, 29 SOUTHERN COUNTIES, 1970

	County Characteristic (Average)	P (Spearman Rho)	t (two tailed)
1.	Median family income	-.06	.31
2.	Size of family	-.04	.21
3.	Age of household head	-.07	.36
4.	Age of homemaker	.17	.89
5.	Education of household head	.04	.21
6.	Education of homemaker	.21	1.11
7.	Capability of adults to work index	.21	1.11
8.	Dependency index	-.10	.52
9.	Social participation of household head	.25	1.34
10.	Social participation of homemaker	.24	1.28
11.	Average social participation score	.01	.05
12.	Leisure time participation score	-.07	.36
13.	Material possessions LOL score	-.23	1.23
14.	Communication items LOL score	-.25	1.34
15.	Number of LOL items possessed	-.13	.68
16.	Anomia scale score	-.14	.73
17.	County population size	.08	.42
18.	Percent blacks in population	.40	2.27*

*Significant at .05 level.

I say nearly all because two were thrown in just to make sure we hadn't overlooked something. Well, it was one of those that turned out to be significantly related: percent nonwhite!

Before an attempt is made to explain these results, perhaps the distribution of the items that went into the make-up of the weighted index should be examined to make certain that there is some kind of consistency within the index itself. To carry out this examination we did a kind of item analysis. The rank correlation of each of the items making up the index was calculated against the overall index values. The results are presented in Table III.

As one might expect most of these correlations are positive and significant. Only one item was correlated in the "wrong" direction and it was nonsignificant. That was the evaluation of the local educational system. This perhaps is not surprising since the better everything else is, the more sophisticated the consumer population becomes and the more critical they get of the educational system. They are presumably more aware of the alternatives and of the importance of education to the continued improvement of the local community.

Four other characteristics were non-significant in their relation to the overall index values suggesting that subjective opinions about these items do not contribute much to the general assessment of the quality of living in the county. These characteristics are the churches and their programs, the extent to which local citizens are perceived as obeying the law, the welfare program and the real income situation of local people. This grouping has something which could be seen as supportive of people from a variety of political and/or economic persuasions. Anti-religionists might be inclined to use this as evidence that churches do not contribute to the wellbeing of people in rural low-income areas. Political liberals (anarchists?) might interpret this to mean that observance of the laws does not contribute to the quality of living so perhaps we could do with fewer laws on the books that citizens might break. Those conservative capitalists who feel that the cost of welfare is much too great could suggest that since the perceived quality of the programs doesn't relate to the overall quality of living, the cost of the programs might be reduced with little effect. I'm not sure which group would say that we shouldn't be concerned about inflation because people don't perceive any differences in the quality of living as being influenced by the real incomes that people receive, perhaps the welfare rightists.

One other observation about this item analysis. The item that had the weakest correlation that was still significant was the summary evaluation by the county residents of the quality of the county as a place to live. This tends to confirm that people can be consistent in their evaluation of the parts and the whole of their living conditions. At the same time, given the weakness of the correlation, this general response is not an adequate substitute for the overall index.

TABLE III

CORRELATIONS OF COMPONENT ELEMENTS WITH OVERALL COUNTY QUALITY OF LIVING INDEX

Index Element	P (Spearman Rho)	t (two tailed)
Opportunity for education beyond high school	.76	6.09*
Opportunity for young people	.72	5.40*
Job opportunity	.69	4.97*
Provision of good housing	.69	4.97*
County government	.65	4.43*
Local politics	.64	4.32*
Income for people working for wages	.62	4.09*
Agriculture and land use	.61	3.99*
Physical environment	.59	3.80*
Opportunities for older people	.54	3.33*
Medical and health services	.53	3.24*
Public utilities	.51	3.08*
Roads and transportation system	.51	3.08*
Recreational opportunities	.42	2.41*
County as a place to live	.39	2.20*
Real income	.29	1.57
Welfare programs	.26	1.40
Obedience to the laws	.14	0.73
Church and religious groups	.13	0.68
Public schools	-.22	1.06

*Significant at .05 level.

Discussion

This effort to develop a weighted index of the overall quality of living based on subjective evaluations by rural residents of the conditions that influence their lives is seen as essentially successful. The application of the technique to the data set made available through the S-79 regional project is seen as an illustration of the technique and at least a tentative test to see if the results can be meaningfully interpreted. The lack of correlation with county characteristics usually associated with the goals of development efforts raises some intriguing questions. If the index is really a valid measure of the overall quality of living of the people living there, are the efforts made in the name of development misdirected? If having greater income is not associated with feelings that living is better, why should that be one of the primary goals of development? The same could be said for formal education, social participation and household conveniences. But what should be the direction of efforts at development? What is the contribution made by nonwhites? Is there any indication that this relationship is spurious?

It is possible that the lack of significant correlations with county characteristics that are the goals of development means that the index as constructed is useless. I don't happen to think so but that is one possible interpretation. Since the index does not have an objective component, it is possible that the results are so far removed from reality (objective conditions) that the index values vary randomly. If this is so, then how is the relationship to percent of the population that is nonwhite explained?

For a test of the usefulness of a technique, the number of cases (counties) included in this study is far too small. The sample size of twenty-nine does not permit interpretation of the results with any great confidence. It is sufficient to illustrate the technique, however!

It may be that the weights used in this illustration are not the best possible. It is true that the selection of the weights used was a strictly subjective decision which was felt to be better than simply giving all of the items included equal weights. Others may find rationales for other weighting schemes that would improve the index.

Now, let's take a closer look at the one county characteristic that did correlate with the overall Quality of Living Index values. Nothing in the literature with which the authors are familiar would have led us to expect this finding. In fact the living conditions of blacks who reside in open-country areas of these southern low-income counties is described in the literature on poverty in recent years as being particularly difficult. The statement that "the poor nonwhite family has problems that transcend the difficulties of other poor families..." is illustrative.[3] While not all nonwhite families living in rural areas are poor, a much higher proportion of them are than is true for white rural families. The easy extension of these facts is that life is worse for rural nonwhites than it is for rural whites. If this is so, then the proportion of nonwhites in the population should have been negatively correlated with the overall Quality of Living Index. But poorness is measured in terms of the number of dollars one has rather than in terms of the richness of the relations one has with family and friends which is a subjective condition. Is there in the culture of the nonwhites a sense of community that provides a different perspective on whatever other conditions may exist in the area? Are we missing the boat with our strong emphasis on the economics and material possessions aspects of "development"?

The Overall Quality of Living Index presented here is not the final answer in the search for the best social indicator but it certainly does raise some questions that are deserving of attention.

Footnotes

*Paper presented at meeting of the Rural Sociology Section of the Southern Association of Agricultural Scientists, Houston, TX, February 6, 1978.

**Ombudsman and Professor of Rural Sociology, University of Tennessee and formerly, Assistant Professor of Agricultural Economics, University of Maryland, respectively. The contribution of Miss Moon-Hui Choe is also acknowledged as she performed the small mountain of calculations required for the tables upon which the paper is based.

[1] Wilkening, E. A., and Boguslaw Galeski, "Quality of Life: What is it?", Newsline (Vol. 5, No. 1, January, 1977) pp. 2-4.

[2] Campbell, Angus, Phillip E. Converse, and Willard L. Rodgers, The Quality of American Life. Russell Sage Foundation, New York, 1977, pp. 474ff.

[3] David, Martin, "The Problem of Poverty in the United States," in Productivity and Poverty, The Johnson Foundation (Racine, Wisconsin) 1966, p. 10.

Section E

RURAL POVERTY

"Perception of Incentives and Constraints by the Low Income Families in the Acceptance of New Ideas and Small Scale Economic Enterprises." Jogindar S. Dhillon, Florida A&M University.

"The Socioeconomic Element as a Dominant Factor in the Resource Status of the Limited Resource Farm Household." Alfred L. Parks, Prairie View A&M University.

"The Culture of Poverty Among Rural Families in a Selected Area of Middle Georgia." Melvin E. Walker, Jr.; and E. Yvonne Beauford, Fort Valley State College.

Perception of Incentives and Constraints by the Low Income Families in the Acceptance of New Ideas and Small Scale Economic Enterprises

Jogindar S. Dhillon*

In a continuing experimental research effort to develop and test alternative means to public assistance programs of helping the rural low income families, the Center for Community Development and Research at Florida A&M University is currently engaged in implementing a four phased study entitled "Instution Building as a Strategy to Reduce the Impact of Rural Poverty." The research findings reported in this paper constitute phase I of this study. The second phase, which is in progress, consist of the identification and case studies of small scale economic enterprises for possible adoption in the third phase. The overall objective of the third phase would be to establish multi-purpose local organizations for the socio-economic development of low income rural families in the selected communities of Northwest Florida. Satellite communities to duplicate the organizational model of experimental communities in the third phase, will be undertaken in the fourth phase.

However, it was considered necessary to develop an understanding of the perceptions of low income family decision makers to the acceptance of new ideas and small scale economic enterprises before undertaking the subsequent phases as noted above.

A review of literature shows that very little work has been undertaken to isolate the institutional and individual characteristics directly inhibiting or encouraging the behavior of the rural poor to the acceptance of new ideas and small scale economic enterprises.

Methodology

The study was conducted in six counties of northwest Florida. The selection criteria for the sample counties was: (1) rurality of the county; (2) incidence of poverty in the county; and (3) racial composition of the county.

Within each county multi-stage sampling procedure, using survey sectional divisions (6x6 mile areas), was used as follows:

First Stage

1. Purposeful selection of six counties in northwest Florida.
2. Division of the six counties into area segments and stratification of the area segments into two categories of population density.

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Paper presented at the Annual Meeting of the Southern Association of Agricultural Scientists, Rural Sociology Section, Houston, Texas, February 1978.

Second Stage

3. Random selection of two "densely populated" and two "sparsely populated" area segments within each county.

Third Stage

4. (First Phase) Systematic selection of every other dwelling or every third dwelling within each area segment for purposes of obtaining family income level.

5. (Second Phase) Sample composed of heads of households of families selected in first phase whose income fell below the poverty level.

In all 586 low income families were selected for the study. Four specially trained interviewers (matched by race and sex) administered a three part questionnaire through face to face interviews. To reduce refusal rate and interviewer effects, the interviewers were matched with respondents by race. Three "callbacks" to respondents who were initially not found at home, were made by the interviewers at different times of the day. This was done to avoid sample bias in favor of types of respondents usually found at home.

The questionnaire consisted of three parts as follows:

A. Background and Behavioral Variables

B. Perceived Incentives and Constraints

C. Attitudinal and Psychological Variables

Findings

Sample Characteristics:

The demographic characteristics of 586 heads of households interviewed were as follows: 60% males, 40% females; 43% black, 57% white; age range - 18 to 94 years, median age 57 years with a standard deviation of 17.7; 54% married, 25% widowed, 21% divorced/separated/single.

The educational mean was 6.2 years (6 years for blacks and 6.3 years for whites). Sixty percent of the respondents were of working age (below 65 years), of whom 43% were employed and 24% were unemployed. The rest were disabled or housewives.

Nearly three fourths (72%) of the respondents owned their homes. Differences in ownership by sex and race were not significant. Sixty-five percent reported that their homes needed major repairs. Nearly half (47%) of those sampled owned both a house and an automobile. Fifteen percent owned neither.

Four-fifths (79%) of the respondents said that they were registered to vote, and of these approximately 65% each reported voting in the last national, state, and local elections. Older residents were more likely than younger residents to be registered (gamma=.32). The relationships between sex or race and registration were virtually zero.

Four questions were asked to determine the aspiration levels of respondents. Analysis was done for respondents of working age (65 years and under). Earning more money was 'very important'to 77% and'not important at all' to 10% of the sample. Sixty three percent reported that getting a good job was very important to them, whereas 21% said it was not important at all. To get job training was very important to 54% and not important to 27%, and getting more education was considered very important by 49% and not important by 27%. The rest of the sample had scattered responses between these two extremes on a scale of 1-7. The four aspiration items met the Guttman criteria with .93 coefficient of reproducibility and .65 coefficient of scalability. The regression analysis showed that the variables of race and age had significant effect (.05 level) on the levels of aspirations. The blacks and younger people had higher aspirations, with age having greater impact that race.

The job motivation of respondents was measured through five questions. Over four-fifths (83%) of the respondents expressed that they would rather earn less money and work than receive welfare and not work. In addition, they (82%) indicated that, if necessary, they would work inconvenient hours to have a job. Two-thirds each would enter a job training program (68%) and did not feel a person should quit an unenjoyable job (63%). Less than half (47%) would take a job that they considered beneath them.

Incentives and Constraints Related to Acceptance of New Ideas and Small Scale Economic Enterprises:

In all 24 items were used to probe the respondents' perceptions of these incentives and constraints. Even though data on these items was collected from respondents of all ages, the following analyses were conducted on respondents of age 65 and younger. It was assumed that this segment of population would be most likely involved in the developmental effort in phase three of this project, as explained in the introduction of this paper.

The dependent variables included both individual and institutional incentives and constraints. The individual incentives and constraints included personality, age, and health. The other factors hypothesized to encourage or restrain low income respondents in starting a small-scale economic enterprise were the family, social (community), religious, economic, educational, and political.

Individual Trait Effects

Over three-fourths of the respondents indicated that they would like to try new work and would not mind the responsibility of a small business if it meant they would have additional income. Nearly three-fourths (72%) did not feel too old to try new ways of making a living. Over one-third (38%) felt that their health would stop them from pursuing "any resonable activity."

Restrictions on respondents due to health were more important than restrictions due to age. The two variables are highly correlated (gamma=.70). While less than one-fourth (24%) of the respondents agreed that their age would restrict their income-related activities, over one-third (38%) agreed that their health would restrict them from "reasonable activities."

Forty-seven percent of the variance in individual traits was explained by eight variables (significant at the .05 level) in a stepwise regression. The variables, in order of importance, were health, age, physical disability, job motivation, social isolation, car ownership, sex, and voter registration.

Family as an Incentive or Constraint

Five items explored the effects of the family on acceptance of small businesses. Four-fifths (80%) of the respondents claimed that their families would not hold them back if they wanted to try something new to make a living, and 81% felt that their families would help them with a small business if the opportunity presented itself. Three-fourths (74%) of the respondents disagreed that family duties kept them too busy to try new ways of making a living. One-half (52%) felt that their families would not object if they had to leave the area for a short time to be in a training program. Of the family institution items, this last one represented the greatest constraint to starting a small business.

Sixty percent (60%) of the respondents claimed that their families were happy with their present life styles. This present satisfaction may be viewed less as a constraint and more as a lack of family incentive to get ahead economically.

Community as an Incentive or Constraint

As great a proportion of respondents agreed (41%) as disagreed (43%) that people in their communities might make fun of them if they tried something new, and twice the proportion agreed (61%) as disagreed (32%) that they would not do something disapproved of by their neighbors. This indicates that if a low income individual felt that neighbors did not approve of his/her starting a small business, social pressure could inhibit the undertaking. However, the statements presented to respondents did not ask whether or not they felt their communities or neighbors would disapprove of their taking part in a program to alleviate poverty. If neighbors approved in that case, the same need for social approval could have a positive effect.

Religion as Incentive or Constraint

Only 13% of the respondents agreed that it was against their religious beliefs to accept changes, while 79% disagreed. One-third (32%) agreed that everything was already planned and that there was no use in trying to change things, while 61% disagreed with this statement. Although few respondents perceived accepting change to be against their religious beliefs, approximately one-third apparently had fatalistically accepted their low income status.

County and Community Power Structure as Incentive or Constraint

No significant explanatory variables were found for county and community power structure as incentive or constraint. Race, county of residence, age, education, and many other independent variables were not significant in regression equations, meaning that individuals who expressed agreement or disagreement with the statements about political institutions were heterogeneous according to measures used in this study.

An examination of findings reveals that the low income rural people in this study perceived local officials, local community leaders, and local politicans as more of a hindrance than a help to them in getting ahead economically. Most felt that police protection would be provided for them, and more respondents than not felt that county officials would help them to effectively implement the adoption of small-scale economic enterprises by the poor as a community development project. It appears that greater success might be predicted through enlisting the support of officials in county departments than through local officials, local community leaders, or local politicans.

Education and Job Opportunities as Incentives or Constraints

Over one-half of the respondents (59%) agreed that they would have difficulty starting a business because of lack of education. One-third (36%) disagreed that a lack of education would hold them back. In regression analysis education explained 24% of the variance in perceived effect of education.

Sixty percent of the respondents agreed it was lack of job opportunities which held them back, 27% disagreed, and 14% were undecided or did not respond.

Of the 60% in agreement, 45% "strongly agreed" with the statement. Proportions of "strongly agree" related to an institutional constraint were as great for only two other question items (i.e., "Local community leaders like to keep things as they are," and "I do not think I would do something which my neighbors do not approve").

Conclusions

From the findings generated by this six-county study, the following conclusions may be drawn about this rural low income population and its perceived incentives and constraints to the acceptance of new ideas and small-scale economic enterprises.

1. A high level of unemployment (24%) prevails among the working age population (approximately 60% of the sample), with blacks and whites equally jobless. However, among the employed, black heads of households are substantially more represented than whites (56% to 39%), with nonworking whites reporting disability twice as often as blacks.

2. This low income population is highly motivated toward employment (83% prefer to earn less money and work than to receive welfare and not work), especially the males, those not disabled, those in better health, and those who do not feel powerless.

3. A strong feeling pervades this rural low income population that lack of job opportunities restricts them in their efforts to get ahead (60%).

4. The more mobile in this population tend to be younger persons. car owners. and those in better health.

5. Aspiration levels are high among this population. cutting across race, levels of education, and age.

6. Although willing to try new work and take on responsibility, these rural low income individuals consider poor health, older age, and lack of transportation as significant constraints.

7. Although the population considers the family as supportive, they at the same time indicate (60%) that their families are happy with their present lifestyles.

8. The approval of neighbors is viewed as important in new ventures by these individuals (61%), and there is a hesitancy to try something new for fear of disapproval by neighbors.

9. Religion, which is significant in the lives of most of these individuals, does not appear to be an inhibiting factor in the acceptance of change.

10. Generally, lack of education is viewed as a constraint among these individuals, with actual education a significant influencing factor.

11. These low income rural people tend to perceive local officials as inhibiting but, on the other hand, tend to view county agency officials as supporting and encouraging.

Implications

Based on the foregoing conclusions about this population and its perceptions, the following implications for development of economic opportunity programs are suggested:

1. Attitudes of these rural low income people about the world in general, future goals (aspirations), and support from others (family and authorities) appear to create a generally positive atmosphere for the introduction of new ideas. This may be particularly important when related to the establishment of small-scale economic enterprises which would be operated by the people themselves.

2. The high levels of respondent job motivation create a circumstance which is conducive to the introduction of new ideas. This receptivity, coupled with the void now sorely felt in the lack of jobs and job opportunities, suggests that not only are these individuals looking for economic opportunities but that they are also of the opinion that they can take advantage of such. Apparently, this population perceives a need for increased job opportunities and feels that new opportunities for making a living must be introduced to alleviate poverty in northwest Florida.

3. The proportions of registered voters and those exercising this prerogative might be interpreted as an indication of this population's interest in determining, at least to some extent, their own circumstances.

4. Based on individual traits, those who are younger, in better health, and who own cars appear to be the best prospects for contact about entering into new economic enterprises.

5. The importance of family and neighbor support must not be overlooked, but rather can be capitalized on to gain interest in and commitment to an economic opportunity program. Although there is indication of satisfaction with present family lifestyles, this may best be viewed as less a constraint and more a lack of family incentive to get ahead economically. Given appropriate and realistic opportunities, this incentive may be nourished.

6. Regarding political institutions which restrain or encourage rural low income individuals, it appears that a tacit understanding exists in this area between the powerful and the powerless regarding preservation of the status quo in the local economy, including the labor market. This phenomenon has been described by one consultant who worked for many years in northwest Florida, observing that this

situation was the greatest obstacle to the delivery of agricultural assistance to the poor. Additionally, literature evaluating failure of poverty programs in the 1960s supported the view that such programs failed due to lack of support by local elites. To effectively implement the adoption of small-scale economic enterprises by the poor as a community development project, then, it appears that greater success might be predicted through enlisting the support of officials in county agencies than through local officials, local and county community leaders, or local and county politicians.

THE SOCIOECONOMIC ELEMENT AS A DOMINANT FACTOR IN THE RESOURCE STATUS OF THE LIMITED RESOURCE FARM HOUSEHOLD

by

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INTRODUCTION

It is not an unknown fact that many of America's farmers have not kept pace in the tremendous growth industry in which they are a part of. To answer the question why they have not kept pace might be an endless task. There are those, however, who believe that the answer can be summarized very briefly. Atkinson (1977), for example, states that these farmers have been inefficient in the use of available resources and in applying new techniques.

Regardless of the cause, during recent times there is increasing cause for concern about the plight of these farmers. Researchers and policy makers alike must realize and acknowledge the significance of this segment of our population. The above referenced population represents as much as 85 percent of farm population, and as much as 40 percent of the general population in many parts of the country. This raises several fundamental questions: (1) can we afford to sit by idle and watch as these people fade by the wayside? (2) what can we do, if anything, to stop or prevent these people from failing?

To answer these questions is a many facited task. There are no quick solutions to these problems. In fact, there appears to be little evidence of understanding the nature of these problems.

A review of literature [1, 2, 4, 5, 6, 7, 8, 9, 10] reveals that knowledge concerning the real problems of these households is very limited. This perhaps stems from the fact that support or assistance programs have been founded without the benefit of a clear understanding of the problems.

Statement of the Problem

The low-income farm problem in the state of Texas is probably as severe as it is in any other state. According to 1974 Agricultural Census figures, approximately 85 percent of the farmers in 12-county region where this study was conducted have gross farm sales of $10,000 or less. These farm household represents approximately 30 percent of the population of these counties.

The low-income of such a large percentage of the population contributes to the poverty of the individual, to the community, and to the nation, in many ways. First of all, the farmers and their families must endure economic and social poverty. Secondly, the young people in the families suffer more devastating effects. The effects of poverty will impact upon their health, education, and social development, thereby causing long range impacts upon their future productivity.

While the problem at hand seems difficult and cumbersome, there is increasing evidence which indicates that if comprehensive and accurate information about the background and other basic characteristics of these low-income farm households are made available to extension personnel and policy makers, significant economic

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This project was financed by CSRS funds through project no. 316-15-88, entitled "Analysis of Resources on Small Low-Income Farms: Their Economic Augmentation, Development and Alternative Uses". This project was directed by Dr. Vance W. Edmondson, former head of department and assisted by Neal Baines, Charles Cokes, Thaddeus McDonald and William Patterson. All of these gentlemen are no longer with the department.

improvements can be made on most of these farms.

Objectives and Scope of the Study

There are numerous problems facing the low-income farm household. This paper is part of a much broader study that was designed to analyze the resource characteristics of small low-income farm households.

This segment of the study addresses itself to the current physical, human, and sociological resources as to the situation on the small, low-income farm households. Results from this study, hopefully, will be useful in helping to understand more about the human behavioral aspects as they relate to the low-income problem.

Procedure and Data Collection

Data contained in this study were collected by means of the personal interview survey technique. A group of 385 low-income farm households were randomly selected from 12 counties in South Central and Southeast Texas. During the late spring and early summer months of 1975, a group of trained research specialists conducted the survey. Of the 385 households contacted and interviewed, only 300 of the questionnaires were found usable. The remaining 85 were disqualified for various reasons, such as incomplete information, too much income, etc.

The selected farm households comprised about one third of the total number of such households in these counties. The questionnaire was very extensive since it was designed to include complete and comprehensive information about the household.

The basic criterion used for selecting participants from the program was level of income or gross farm income. The low income farm household used in this study was defined as a farmer with gross income of $10,000 or less, and whose other income was less than 50 percent of total income.

ANALYSIS AND DISCUSSION

For purposes of analysis and discussion, a number of factors will be presented and discussed. These factors are not necessarily presented in order of importance. The basic units of measurements are averages, frequencies, and percentages.

Age

The husbands of the family averaged 63 years of age and the wives averaged 59, Table 1. The range of age for husbands was a low of 23 and a high of 87 with a median age of 66. The range of age for wives was from a low of 22 and a high of 85 with a median age of 63.

Children and Other Adults Living in the Household

About three-fourths of the households surveyed had no other people living in the households, Table 2. Only 17.3 percent of the households had one male child, and 15 percent had one female child. This is to be expected considering the fact that the average age of the head of household is very old and children are likely to be grown and out on their own. This is further verified by the fact that 95 percent of the households did not have children in the 0-5 bracket, 3.3 percent had one child, 1.3 percent had two children, and 0.3 percent had three children. The other age brackets ranging up to over 20 indicated a very low frequency of children, Table 3.

Racial and Religious Background

The sample survey contained 50 percent white, 49.7 percent black, and 0.3 percent Mexican American, Table 4. By the same token, 90.3 percent of the families indicated that they were Protestants, 8.7 percent were Catholic and 1.0 percent were Jewish, Table 5.

Education

Some very interesting results were found regarding the educational background of these households. Almost two-thirds, or 63.3 percent, of the husbands had 8 years or less of formal schooling, while 43 percent of the wives fit this category, Table 6. Four percent of the husbands and 6.3 percent of the wives indicated that they had finished college.

As far as educational emphasis, 86 percent of husbands indicated that their education had emphasized general education and 6.7 percent had had some agriculture training. Of the wives, 81.3 percent indicated that their education was general and 1.3 percent had had some agriculture training, Table 7.

School activity of children was basically insignificant. About 90 percent of the households had no children enrolled in school, Table 8.

Community Background

A question was raised regarding the background or type of community where they had spent most of their lives. The majority, 90.7 percent, indicated that they had lived on a farm most of their life, followed by another 6.3 percent that had a rural nonfarm background, Table 9.

Health Status

The respondents were asked several questions regarding the health, or disability, status of family members and its effect on their ability to do farm work. The majority (71.7 percent) of the heads of the households indicated that they were not bothered by health or any disability that affected their ability to do farm work, Table 10. Of the other family members only 20.7 percent were hampered by health disabilities.

Of the households having family members with disabilities, the most frequently disabled were the husbands, followed by their wives, Table 11.

Occupational Background of Husband's and Wife's Father and Mother

It would appear from this question that these families have followed in the tradition of farming. In 89.3 percent of the cases the husbands' father had been a farmer or farm manager. Eighty percent of the wives' fathers were farmers or farm managers, Table 12. Their mothers were farmers and housewives.

Stability

The respondents indicated very strong stability in terms of their location. Some 90.3 percent indicated that they had not moved during the past ten years, Table 13. Only 8 percent had moved once.

The respondents were also pretty stable in terms of the number of outside jobs they had held in the past 10 years. A majority, 52.7 percent, had not held an outside job, while another 38 percent had had only one job, Table 14.

Home Characteristics

The majority of the families lived in frame houses, Table 15. Only 13.7 percent of the homes were of brick or stone construction. On the other hand, however, most of them (88.7 percent) owned their homes, Table 16. A very small percentage (2.0) were renting the homes in which they lived.

The average age of the homes was 29.5 years. The average size of homes was 5.9 rooms.

Importance of Various Sources of Information

Respondents were asked to respond as to how they regarded various sources of information concerning its importance to them. The were asked to rank the source from extremely important to extremely unimportant.

The results of this question are shown in Table 19. The respondents regarded the church as being the most extremely important source of information to them. Friends were listed more frequently as being moderately important.

Hours Worked on the Farm

The husbands indicated that they worked an average of 23.8 hours per week on the farm. The wives worked considerably less, only 6.7 hours per week, Table 20. The small number of hours worked per week on the farm may be a significant factor affecting the level of farm income.

The children in the family contributed very little to work on the farm, Table 21. They contributed an average of 4.5 hours per week.

Membership in Farm Organization

The majority of the respondents indicated that they did not hold membership in any farm organization, Table 22. The most frequently indicated farm organization, however, was the Farm Bureau. Nineteen percent of the farmers belongs to this organization.

Sources of Farm Information

Respondents were asked to respond by indicating either yes or no to whether or not they received farm information from various sources. The most commonly used source of information was from county agents. More than two-thirds, (68.7 percent) of the farmers indicated the county agent as a source of information, Table 23.

The respondents were also asked to indicate if they had received any assistance from a list of Agricultural Agencies in the last 5 years. Only a small percentage (about 17 percent) of the farmers indicated that they had received assistance, Table 24.

Anticipated Changes in Farming Operation Over Next 3-5 Years

A very high percentage (81.5 percent) of the farmers indicated that they did not anticipate any changes in the next 3-5 years, Table 25.

These farmers in general seem to project somewhat of a pessimistic outlook toward their future in farming.

Length of Time Engaged in Farming

The respondents in the survey had been in farming, basically, all of their lives. They averaged over 37 years in farming, Table 26. This was no surprise considering that most of them were born on farms.

Inheritance

Over 52 percent of the farmers indicated that they had received their farms through inheritance, Table 27. This perhaps suggest that if they had not inherited their farms, then they perhaps would not be engaged in farming.

Preference of Living Location and Job

If you had an opportunity to live any place you wanted to, where would you move? An amazing 92.7 percent of the respondents to this question indicated that they would not move, Table 28. This may suggest some degree of satisfaction with where they are living.

The respondents were also asked that if they could do so without any problems, what would they change their job to? Most of them indicated that they would not change jobs, Table 29.

Education Aspiration and Occupational for Children

Respondents were asked questions concerning the educational and occupational aspirations for their children.

About one-fourth of those responding indicated that they would like for their children to obtain a college degree, Table 30. However, it is significant in that only 34 percent of the respondents responded to this question. The remaining respondents were probably those having no children.

Therefore, the significance of this question is somewhat of a dubious nature. The education and career patterns of children perhaps having already been established.

Reasons for Living in Rural Area

A number of various reasons were given for living in rural areas. The larger number indicated that it was because they were born there. The next best response was that they like it there, Table 32.

Perceived Needs of Small Farmers

Money appears to be the most highly perceived need of the small farmer, as seen through the responses of the respondents. More money for financing and better cattle prices received the highest frequencies of responses of the list of perceived needs, Table 33.

However, the dispersion of the responses are such that it is extremely difficult to derive any significant conclusion.

Summary and Conclusion

As stated earlier in the objectives, the purpose of this paper was to address the current human, sociological, and behavioral aspects in the small, low-income farm households. Particular emphasis in this paper was placed upon those resource aspects of the household not having traditional economic dimensions, but, yet, at the same time having closely related cause-effect relationships, thereby having strong socioeconomic implications nevertheless.

A number of variables believed to have strong influences upon the level of income were selected for closer evaluation. It was found that the average age of the head of households is 63 years of age. This compares with an average age of farmers in the same area of 55.4 years of age. There were also some other very interesting findings in the study. In general, the results of this study indicates that the average head of household of these small, low-income farms is rather old, has limited education, was born on the farm to parents that were also farmers, would not move if offered a chance, would not change jobs, does not belong to any farm organization, receives little or no assistance from state and federal government agricultural agencies, and believes that the answer to the low-income farm problem is better farm prices and more money for financing.

There are no significant conclusions to be drawn from this analysis. However, the findings from this study are useful to researchers, planners, and policy makers in designing future programs to aid and assist these limited resource people.

References

1. Atkinson, Ron, 1977. "Can Small Farmers Be Helped To Change?" *Rural Development Research and Education*, Vol. 1, #4.

2. Bylund, H. Bruce, 1963. "Social and Psychological Factors Associated With Acceptance of New Food Products", Pennsylvania Agricultural Experiment Station Bulletin No. 708.

3. Gilbert, Olmira O., John E. Dunkelberger and Calvin L. Vanlandingham, 1977. "Intensity of Aspiration in Adult Households and Its Relation to Household Status Attainment", *Rural Sociology in the South: 1977*, Proceedings Rural Sociology Section, Southern Association of Agricultural Scientists, Atlanta, February 6-9, 1977.

4. Ladewig, Howard W. and Vance W. Edmondson, 1972. *An Interim Evaluation: The Effectiveness of Non-Professional in Cooperative Extension Education for Low-Income Farms*, Tex. AES B-1122, 1972.

5. *Rural Sociology in the South: 1976*. Proceedings Rural Sociology Section, Southern Association of Agricultural Scientists, Mobile, Alabama

6. *Rural Sociology in the South: 1977*. Proceedings Rural Sociology Section, Southern Association of Agricultural Sceintists, Atlanta, Georgia.

7. Southern Rural Development Center, 1977. *Rural Development Research in Sociology*, SRDC Series Publication No. 19, Southern Rural Development Center, Mississippi State, Mississippi.

8. Southern Rural Development Center, 1977. *Resources in Evaluation for Rural Development*, Rural Development Bibliography Series No. 2, Southern Rural Development Center, Mississippi State, Mississippi.

9. Southern Rural Development Center, 1977. *Small Farm Operations*, Rural Development Bibliography Series No. 4, Southern Rural Development Center, Mississippi State, Mississippi.

10. Stubbs, Alice C., 1977. "Household Economic Management: Present Housing Condition and Housing Problems of Low-Income Families", Southern Cooperatives Series Bulletin 191 for Southern Region Project S-66, Texas A&M University, College Station, Texas.

Table 1. Age Distribution of Husbands and Wives

Age Group	Frequency of Response Husbands	Wives
21-25	2	5
26-30	3	2
31-35	5	10
36-40	7	15
41-45	14	13
46-50	12	23
51-55	26	37
56-60	35	26
61-65	37	51
66-70	59	52
71-75	45	32
76-80	28	12
Over 80	13	3
Total Frequency	300	300

Average Age of Husbands = 63 Average Age of Wives = 59
Median Age of Husbands = 66 Median Age of Wives = 62

Table 2. People Other Than Husband and Wife Living in the Farm Household

	Male Children		Male Children		Male Children	
No.	Frequency of Response	Percentage of Response	Frequency of Response	Percentage of Response	Frequency of Response	Percentage of Response
0	220	73.3	225	75.0	224	74.7
1	52	17.3	45	15.0	21	7.0
2	19	6.3	21	7.0	51	17.0
3	6	2.0	5	1.7	4	1.0
4	3	1.0	1	0.3	--	--
5	--	--	3	1.0	--	--

Table 3. Children in the Household According to Age Category

Age Group	No Children No.	%	One Child No.	%	Two Children No.	%	Three Children No.	%
0-5	285	95.0	10	3.3	4	1.3	1	0.3
6-10	267	89.0	23	7.7	10	3.3	--	--
11-15	248	82.3	32	10.7	14	4.7	6	2.0
16-20	247	82.3	40	13.3	11	3.7	2	0.7
Over 20	268	89.3	28	9.3	3	1.0	1	0.3

Table 4. Racial Background

Race	Frequency	% of Total
American Indian	0	0.0
Caucasian	150	50.0
Mexican American	1	0.3
Black	149	49.7
Total	300	100.0

Table 5. Religious Background

Religious Affiliation	Frequency	% of Total
Protestant	271	90.3
Catholic	26	8.7
Jewish	3	1.0
Muslim	--	--
Other	--	--
Total	300	100.0

Table 6. Educational Background

Level of Education	Husband Frequency	%	Wife Frequency	%
8 Years or Less	190	63.3	129	43.0
9-11 Years	31	10.3	44	14.7
Completed High School	42	14.0	70	23.3
College Training or Tech. Training	13	4.3	18	6.0
College Graduate	12	4.0	19	6.3
No Response	12	4.0	20	6.7
Total	300	100.0	300	100.0

Table 7. Educational Emphasis

Category	Husband Frequency	%	Wife Frequency	%
General	258	86.0	244	81.3
Agriculture	20	6.7	4	1.3
Home Economics	1	.3	8	2.7
Bus./Secretarial	1	.3	2	.7
Voc./Other	2	.7	6	2.0
College Preparation	6	2.0	16	5.3
No Response	12	4.0	20	6.7
Total	300	100.0	300	100.0

Table 8. People Living in Household Enrolled in School

Category	Number (Percentage) Enrolled						
	0	1	2	3	4	5	6
Elementary	265 (88.3)	26 (8.7)	8 (2.7)	1 (.3)	--	--	--
Junior High	264 (88.0)	23 (7.7)	12 (4.0)	1 (.3)	--	--	--
Senior High	250 (83.3)	36 (12.0)	13 (4.3)	1 (.3)	--	--	--
College	277 (92.3)	21 (7.0)	2 (.7)	--	--	--	--
Other	--	--	--	--	--	--	--
Total	269 (89.7)	11 (3.7)	(2.0)	--	--	--	--

Table 9. Type of Community Where They Have Spent Most of Their Life

Category	Frequency	%
Rural Nonfarm	19	6.3
Rural Farm	272	90.7
Urban Nonfarm	7	2.3
Urban Farm	2	.7
Total	300	100.0

Table 10. Health Status of Head of Household and Its Affect on His Ability To Do Farm Work and Other Family Members Partially or Totally Disabled

Category	Frequency and Percentage of Response			
	Yes	%	No	%
Head of Household	85	(28.3)	215	(71.7)
Other Family Members	62	(20.7)	238	(79.3)

Table 11. Persons in Household Partially or Totally Disabled

Family Member	Frequency and Percentage of Response	
	No.	%
Husband	33	11.0
Wife	18	6.0
Child	3	1.0
Grandparent	6	2.0
Uncle or Aunt	0	--
Other	2	.7
No Response	238	79.3
Total	300	100.0

Table 12. Occupational Background of Husband's and Wife's Father and Mother

Occupation	Husband's Father		Husband's Mother		Wife's Father		Wife's Mother	
	Frequency of Response	%	Frequency of Response	%	Frequency of Response	%	Frequency of Response	%
Professional & Techinal	1	.3	2	.7	3	1.0	2	.7
Manager, Official & Proprietor	2	.7	--	--	3	1.0	1	.3
Clerical Worker	--	--	1	.3	--	--	1	.3
Salesperson	5	1.7	2	.7	7	2.3	1	.3
Craftsman & Foreman	4	1.3	--	--	5	1.7	--	--
Operatives	--	--	--	--	3	1.0	--	--
Nonfarm Laborers	7	2.3	1	.3	12	4.0	1	.3
Private Household Workers	--	--	2	.7	--	--	6	2.0
Other Service Worker	1	.3	--	--	--	--	1	.3
Farmer and Farm Managers	268	89.3	136	45.3	240	80.0	123	41.0
Farm Laborers and Foreman	--	--	--	--	1	.3	--	---
Housewife	--	--	146	48.7	--	--	138	46.0
No Response	12	4.0	10	3.3	26	8.7	26	8.7
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 13. Number of Times Family Moved in Last 10 Years

Number of Times Moved	Frequency and Percentage of Response Frequency	%
0	271	90.3
1	24	8.0
2	2	.7
3	2	.7
4	--	--
5	--	--
6	--	--
7	--	--
8	--	--
9	--	--
Total	300	100.0

Table 14. Number of Jobs Held in Last 10 Years

Number of Jobs	Frequency and Percentage of Response Frequency	%
0	158	52.7
1	114	38.0
2	18	6.0
3	8	2.7
4	0	--
5	1	.3
6	1	.3
Total	300	100.0

Table 15. Type of Family Homes

Type of Home	Frequency and Percentage of Response Frequency	%
Wood Frame	249	83.0
Brick or Stone	41	13.7
Combination	6	2.0
Mobile Home	--	--
Other	3	1.0
No Response	1	.3
Total	300	100.0

Table 16. Tenancy of Home Ownership

Ownership Type	Frequency and Percentage of Response Frequency	%
Purchasing	28	9.3
Paid For	266	88.7
Renting	6	2.0
	300	100.0

Table 17. Age of Family Homes

Age	Frequency and Percentage of Response Frequency	%
0	6	2.0
0-5	28	9.3
6-10	29	9.7
11-20	55	18.3
21-35	85	28.3
36-50	55	18.3
51-75	27	9.0
76-100	12	4.0
Over 100	3	1.0
Total	300	100.0

Average Age = 29.5

Table 18. Size of Family Homes

Number of Rooms	Frequency and Percentage of Response Frequency	%
0	1	.3
1	0	--
2	1	.3
3	2	.7
4	22	7.3
5	97	32.3
6	90	30.3
7	66	22.0
8	15	5.0
9	6	2.0
Total	300	100.0

Average Number of Rooms = 5.8

Table 19. Importance of Various Sources of Information

Source of Information	Extremely Important		Moderately Important		Important		Moderately Unimportant		Extremely Unimportant	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Television	92	30.7	104	34.7	77	25.7	25	8.3	2	.7
Radio	99	33.0	100	33.3	76	25.3	23	7.7	2	.7
Newspaper	55	18.3	58	19.3	88	29.3	65	21.7	34	11.3
Magazine	52	17.3	68	22.7	91	30.3	62	20.7	27	9.0
Books	42	14.0	30	10.0	84	28.0	99	33.0	45	15.0
Friends	136	45.3	111	37.0	41	13.7	11	3.7	1	.3
Relatives	156	52.0	83	27.7	37	12.3	22	7.3	2	.7
Church	159	56.3	84	28.0	28	9.3	16	5.3	3	1.0

Table 20. Number of Hours Worked In An Average Week by Husband and Wife On The Farm

Hours Worked	Frequency of Response	
	Husbands	Wives
0-5	60	235
6-10	38	22
11-15	37	6
16-20	46	16
21-25	16	5
26-30	24	3
31-35	2	2
36-40	22	5
41-45	7	--
46-50	14	--
51-55	2	1
56-60	11	1
61-65	0	--
65-70	9	1
71-75	4	2
76-80	2	--
81-85	2	--
86-90	3	--
91-95	0	--
95-100	2	1
Total	300	300

Average Hours Worked by Husbands = 23.8
Average Hours Worked by Wives = 6.75

Table 21. Number of Hours Worked in An Average Week by Children and Other Household Members in An Average Week

Hours Worked	Frequency	
	Children	Other Members
0-5	263	297
6-10	17	2
11-15	6	--
16-20	6	1
21-25	2	--
26-30	4	--
31-35	--	--
36-40	2	--
Total	300	300

Average Number of Hours Worked by Childrens = = 4.5
Average Number of Hours Worked by Other Members = 3.1

Table 22. Memberships in Farm Organizations By Head of Household And/Or Spouse

Farm Organization	Frequency and Percentage of Response	
	Frequency	%
Farm Bureau	57	19.0
Texas Cattlemen Assoc.	1	.3
SW Cattlemen Assoc.	8	2.7
Independent Cattlemen Assoc.	6	2.0
Dairymen Cattlemen Assoc.	--	--
Rice Growers Assoc.	--	--
Other	10	3.3
None	218	72.7
Total	300	100.0

Table 23. Sources of Farm Information

Source	Frequency of Response			
	Yes	%	No	%
County Agent	206	68.7	94	31.3
Soil Conservation Service	140	46.6	160	53.4
Neighbors	181	60.3	119	39.7
Supply Companies	82	27.3	218	72.7
Television	121	40.3	179	59.7
Radio	150	50.0	150	50.0
Newspaper	107	35.7	193	64.3
Farm Journals	170	56.7	130	43.3
Almanac	136	45.3	164	54.7
Farm Organization	61	20.3	239	79.7
Other	10	3.3	290	96.7

Table 24. Assistance Received From Agricultural Agencies in Last 5 Years

Agency	Frequency of Response			
	Yes	%	No	%
Farmers Home Administration	23	7.7	277	92.3
Soil Conservation Service	60	20.0	240	80.0
ASCS	68	22.7	232	77.3
Agricultural Ext. Service	52	17.3	248	82.7

Table 25. Anticipated Changes in Farming Operations Over Next 3-5 Years

Nature of Change	Frequency and Percentage of Response					
	Yes	%	No	%	Not Sure	%
Increase Acreage	17	5.7	266	88.7	17	5.7
Decrease Acreage	13	4.3	270	90.0	17	5.7
Change Enterprises	17	5.0	267	89.0	18	6.0
Expand Enterprises	27	9.0	256	85.3	17	5.7
Retire from Farming	29	9.7	253	84.3	18	6.0
None Anticipated	132	44.0	155	51.7	13	4.3

Table 26. Length of Time Engaged in Farming

Number of Years	Frequency and Percentage of Response	
	Frequency	%
0-5	16	5.3
6-10	16	5.3
11-15	18	8.0
16-20	16	5,3
21-25	20	6.6
26-30	26	8.6
31-35	19	6.4
36-40	28	9.4
41-45	14	4.6
46-50	45	15.1
51-55	21	6.9
56-60	38	12.7
61-65	15	5.0
66-70	6	2.0
71-75	2	.6
Total	300	100.0

Average Number of Years = 37.18

Table 27. Did You Inherit Your Farm?

Response	Frequency and Percentage of Response	
	Frequency	%
Inherited	150	52.0
Do Not Inherited	140	46.7
Inherited Part, Bought Part	1	.3
No Response	3	1.0
Total	300	100.0

Table 28. If You Had An Opportunity To Live Any Place You Wanted To, Where Would You Move?

Cateogry	Frequency and Percentage of Response	
	Frequency	%
Would Not Move	278	92.7
Move to Another Rural Area	5	1.7
Small Town	10	3.3
Big City	3	1.0
Other	2	.7
No Response	2	.7
Total	300	100.0

Table 29. If You Could Do So Without Any Problems, What Would You Change Your Job To?

Job Title	Frequency and Percentage of Response	
	Frequency	%
Professional and/or Technical	2	.7
Managers, Officials and Proprietors	1	.3
Clerical Workers	--	--
Sales Worker	--	--
Craftsman and Foreman	1	.3
Operatives	7	2.3
Nonfarm Laborers	3	1.0
Private Household Worker	1	.3
Would Not Change	184	61.3
No Response	101	33.7
Total	300	100.0

Table 30. Educational Aspiration For Children

Educational Level	Frequency and Percentage of Response	
	Frequency	%
Elementary School	0	.0
High School	10	3.3
Some College and/or Technical Training	3	1.0
College Graduate	73	24.3
Graduate or Professional	12	4.0
Whatever Child Wants	5	1.7
No Response	197	65.7
Total	300	100.0

Table 31. Preference of Occupation for Children When Grown

Occupation	Frequency and Percentage of Response	
	Frequency	%
Professional and Technical	30	10.0
Clerical Worker	--	--
Sales Work	--	--
Craftsman and Foreman	--	--
Nonfarm Laborer	1	.3
Farmer	4	1.3
Whatever Child Wants	41	13.7
Something That Gives Them Decent Living	10	3.3
No Response	214	71.3
Total	300	100.0

Table 32. Reasons For Living in Rural Area

Reason	Frequency and Percentage of Response	
	Frequency	%
Born Here	125	41.7
Like It	56	18.7
Like Country Life	11	3.7
Don't Like City	14	4.7
Familiar With Rural Area	3	1.0
Home to Me	4	1.3
Only Place I Know	6	2.0
Economic Reasons	4	1.3
Other	22	7.3
No Response	55	18.3
Total	300	100.0

Table 33. Perceived Needs of Small Farmers

Needs	Frequency and Percentage of Response	
	Frequency	%
Lower Taxes	10	3.3
Better Cattle Prices	57	19.0
Lower Feed Prices	4	1.3
Lower Fertilizer Prices	5	1.7
More Government Support	20	6.7
Less Government Support	5	1.7
More Information on Farming	15	5.0
More Equipment, Machinery	14	4.7
Better Roads	3	1.0
Drainage	6	2.0
Organization	4	1.3
Money, Finance	57	19.0
Coop Farming	2	.7
Cheaper Labor	2	.7
Smaller Markets with Less Big Business Interference	2	.7
To Be Allowed To Grow More of Specific Crops	2	.7
Determination	1	.3
Initiative	1	.3
I Don't Know	9	3.0
Other	39	13.0
No Response	42	14.0
Total	300	100.0

THE CULTURE OF POVERTY AMONG RURAL FAMILIES IN A SELECTED AREA OF MIDDLE GEORGIA

Melvin E. Walker, Jr. and E. Yvonne Beauford*

Over the last decade, millions of dollars have been spent on what is labeled as the "war on poverty". The principal focus of Federal Anti-Poverty Programs has been upon providing social and economic assistance, to the poor with the underlying assumption that this approach is paramount to upward mobility. Oscar Lewis, a noted anthropologist, and other proponents of the "culture of poverty" hypothesis argue that the poor possesses a unique way of life and a value system which is deviant, degenerate, and dyfunctional, and that these life-styles are transmitted along family lines from one generation of poor to the next, regardless of ethnicity and place of residence. It is also argued that these traits are responsible for perpetuating the cycle of poverty. On the other hand, critics of the hypothesis argue that the poor does not possess a unique sub-culture or set of values. They admit, however, that the behavior of the poor differs from that of the non-poor or middle class, but these differences are primarily a result of the poor seeking ways to cope with its social and economic conditions.

While this controversy continues, preventive and remedial programs are continuously needed and should be conceived, planned, and implemented to assist disadvantaged families and individuals in better coping with adverse conditions of their environments and to help them ultimately become financially self-sufficient. Unless we gain better knowledge of the existence or non-existence of such a sub-culture and develop an understanding of behavioral patterns and value orientations among the poor and how they differ from the non-poor, it will be virtually impossible for programs designed to break the cycle of poverty or to prevent the inter-generational perpetuation of deviant life styles to be effective. The purpose of this paper is to re-examine selected aspects of the "culture of poverty" assumption utilizing a unique set of survey data for rural heads of Middle Georgia families.

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Previous Work

Despite the continuing controversy between the proponents of the "culture of poverty" concept (O. Lewis, 1966, 1961, 1959; Glazer and Moynihan, 1963; Moynihan, 1968; Ball 1968; Miller, 1968, 1958)* and the critics (Rainwater, 1970; H. Lewis, 1969; Valentine, 1968; Liebow, 1967)* several studies have been conducted in an effort to either refute or confirm the hypothesis. These attempts, however, have resulted in very little conclusive empirical evidence sufficient to confirm or refute the hypothesis. Kutner (1975), for example, in a study of twenty-nine of Lewis's poverty traits utilizing six ethnic/residence population types found that while the poor and non-poor showed significant differences for twenty-four of the traits studied in at least one ethnic/residence group, significant differences for all groups existed on considerably fewer traits. Similarly, Billings (1974) found in a comparison of attitudinal characteristics of disadvantaged Appalachians (North Carolina) with middle-class North Carolinans that attitudinal differences among these groups was quite small. Studies with similar results have been conducted by others (Ball, 1968; Fave, 1974; Irelan, 1969; Leeds, 1971; Miller, 1976; Rodman, 1971).

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*See L. Richards Della Fave, "The Culture of Poverty Revisited: A Strategy for Research", Social Forces, Vol. 21, No. 5, June 1974, for a detailed discussion.

While empirical evidence supporting the hypothesis is limited, there are evidences which suggest that levels of attainment of offsprings and/or siblings are influenced by parental and personal values, experiences and achievements as well as early childhood experiences (Blau and Duncan, 1967; Duncan 1969; Lipset and Bendix, 1967). McCoy (1974), for example, found that ascribed and achieved levels of living among young rural blacks in the Mississippi Delta were directly related to the attained level of education and occupation of their fathers. He then concluded: "The complex of conditions, including race, which go into establishing one's social inheritance are among the most powerful factors influencing ultimate life success". Other similar studies are also cited (Hess, 1970; Larson, 1972; Sandis, 1970).

Many of these studies, however, may or may not have measured what Lewis (1966) referred to in his hypothesis since it appears to be inherent within the hypothesis that Lewis was describing the characteristics of the long-term poor, i.e. persons or families having long histories of poverty. The majority of the studies cited above was conducted utilizing a cross-sectional sample of the poor and non-poor at a given point in time with no consideration given to the length of time the person was either in or out of poverty. Greater differences, for example, are expected to be found between persons or families locked into the cycle of poverty (experiencing three or more generations of poverty) and those families or persons never experiencing poverty (the "always affluent"). Similarly, fewer differences are expected to be found between persons or families having recently escaped the cycle of poverty and those having remained in poverty. This study is designed to evaluate the differences between the long-term poor and the "always affluent" as well as between the long-term poor and the "recent affluent" (escaped-poverty group).

Objectives

The objectives of this paper are: (1) to re-examine selected indicators of Lewis's poverty traits assumed under the culture of poverty notion in order to determine if the long-term poor, those escaping poverty and the always-non-poor differ significantly in frequency in their demonstration of these traits, and (2) to compare these results with those of other investigations in which similar trait indicators were used.

Source of Data

Data for this analysis were obtained from a survey conducted in the summer of 1974 in connection with the study "Poverty Isolation and Alleviation in Nineteen Middle Georgia Counties" (CSRS 215-15-30). The survey instrument was designed by an interdisciplinary research team to assemble information related to the four major dimensions of family life: namely, demographic characteristics, social structure and processes, resource factors and value orientations. Information which would allow the historical social and economic conditions of the family to be determined, i.e. intergenerational disadvantagement, was also obtained. The sample consisted of 943 heads of families representing a randomly selected cross-section of all household heads in the study area. Information was obtained by personal interviews from approximately 77 percent of all persons contacted or 730 household heads.

In order to determine how representative the sample as a whole was, population estimates were constructed utilizing information from the 1970 Census of Population. The sample was found to be highly representative of all heads of Middle Georgia families. It is, therefore, the opinion of the writers that the sample is also representative of all characteristics of heads of Middle Georgia families.

Method

Measurement of economic situation (the independent variable).

Families included in this study were classified on the basis of their current economic situation and the determined economic situation of the respondent's (household head's) parents and grandparents. Economic situation as used in this study refers to the status of the household head in relation to the head's parents and grandparents, i.e., whether or not the head advanced economically when compared to his parents and grandparents. If a household head was currently in poverty and had a history of poverty*, he was considered to be the head of a family which had not broken the cycle of poverty. On the other hand, if a household head was currently out of poverty but had a history of poverty, he was considered to be the head of a family which had broken or escaped the cycle of poverty.

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*A person was considered to have a poverty history if it could be determined that both his parents and grandparents were poverty-stricken according to the criteria described in the text.

A household head was considered to be currently in poverty when the total family income when adjusted for residence and family size fell below USDA poverty guidelines in effect in 1974. A household head was considered to have a history of poverty when income estimates (as recalled) by the respondent) of the parents and grandparents of the respondent adjusted to 1974 values fell below USDA poverty guidelines in effect in 1974. When income estimates for parents and/or grandparents of the respondent could not be recalled by the respondent, information on type of employment was obtained and income estimates were assigned on the basis of what a person performing that type of work could have been expected to receive at that time as determined from the best available statistics.

From the classification of household heads on the basis of economic situation, four groups emerged: (1) the always-affluent group included families that were currently out of poverty and no evidence existed that either the parents or grandparents of the household head (respondent) had ever in the past experienced poverty for any prolonged period; (2) the escaped-poverty group included families that were currently out of poverty, but evidence existed that both the parents and grandparents of the respondent had experienced poverty for a prolonged period; (3) the poverty-cycle group was composed of families currently in poverty, and evidence existed that both the parents and grandparents of the respondent were also poverty-stricken; (4) the became-poverty group included families currently in poverty but neither the parents nor grandparents of the respondent showed traces of poverty histories. Families in this category were poor mainly as a result of old age or illness.

This analysis involves three of these groups: (1) Poverty-Cycle, (2) Escaped-Poverty and (3) Always-Affluent. The four divisions were necessary since this study constitutes a part of a larger study designed to isolate poverty-cycle families and to identify factors which may serve to perpetuate the cycle of poverty among Middle Georgia families.

Selection of poverty trait indicators (dependent variables)

Selected indicators for each of Lewis's four "culture of poverty" dimensions are reported in Table 1. Indicators selected are as close as possible to those used by Kutner (1975) mainly for purposes of comparison. Indicators selected were considered to be appropriate measures of the specified trait.* Where possible, simple measures were used. In other instances, it was necessary to compute composite measures in order to obtain indicators.

Items used in computing these measures were chosen on the basis of face vadility. None of the usual technical tests for unidimensionality, internal cohesion or stability were performed on any of them with the exception of the powerlessness scale (Walker, 1977). The Likert technique of scoring (simple sums) was used.

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*For a complete discussion of the justification or rationale for trait indicators, see Kutner (1975).

Table 1

Poverty Traits and Related Indicators

Poverty Traits	Indicators
I. Physical Environment (Nature of the Slum Community)	
A. Poor housing conditions	A. Type of construction, Age of dwelling, piped water, hot water heater, flush toilet, tub/shower, central air, kitchen sink, and electricity.
B. Crowded Quarters	B. $\dfrac{\text{Number of bedrooms}}{\dfrac{\text{No. of females} - 1}{2} + \dfrac{\text{No. of males}}{2}}$
C. Stable residence	C. Average number of years in the community.
II. Family Life (Nature of the Family)	
A. Matriarchal families	A. Percentage of female-headed households.
B. Predominance of nuclear family	B. Percentage of families with either husband and/or wife, children, and others in household.
C. Strong predisposition to authoritarianism	C. Disagreement with: 1. Children should be allowed to make their own decisions at an early age. 2. A good husband will help his wife with the house work. 3. Both the husband and wife should have a voice in family decisions.
D. Abandonment of mothers and children	D. Divorced, separated or never married parents (or where-abouts of spouse unknown).

Table 1 (cont'd.)

E. Extended family ties quite strong	E. Agreement that: 1. One should always put the family's desires ahead of his own goals. 2. One should never ignore the advise of his kinfolk.
III. Relationship to Institutions (Relationship of the Subculture to the Larger Society)	
A. Low level of education and literacy	A. Percentage of household heads and spouses with less than six (6) years of schooling.
B. Higher proportion of individual in younger age group	B. Persons in household less than 12 years of age.
C. Lack of property ownership	C. Farm and/or home ownership.
D. Political apathy	D. Strong agreement to: 1. There is little use writing to public officials because often they aren't really interested in the problems of the average man. 2. It makes little sense to go out and vote because the average man's vote does not count anyway.
E. Provincial and locally oriented	E. Strong agreement to: 1. It is better to have friendly neighbors than a high paying job. 2. It's better to have lots of friends than lots of money. 3. It's better to have an average paying job among homefolks than a high paying job in a strange place.
IV. Psychological Characteristics - Attitudes, Values, and Character of the Individual.	
A. Strong feeling of alienation	A. Strong agreement with: 1. People aren't friendly anymore. 2. People don't visit anymore nowadays. 3. Friends and neighbors just don't care about you. 4. In order to get ahead, a person must get out of this community.

Table 1 (cont'd.)

B. Strong feeling of helplessness	B. Strong agreement with: 1. An education doesn't help in getting a good job. 2. Everyone should be able to succeed. 3. Spending money for a college education is a waste because a person is not going to be employed on the basis of their skills. 4. One can't do anything about the future.
C. Sense of resignation and fatalism	C. Agreement with: 1. You can't get ahead anymore. 2. It's no use to try to change things because you can't do anything about the way things are. 3. It makes little sense to save money, you are going to die and leave it anyway, so you may as well enjoy it now. 4. The future outlook is so bad a person can't tell his children what they should do. 5. Many times I feel that it doesn't do any good to think about what to do. You might just as well flip a coin. 6. You just have to accept things as they are. 7. Nowadays a person has to live pretty much for today and let tomorrow take of itself.
D. Strong feeling of dependence	D. Strong agreement with: 1. Success is mostly a matter of getting good breaks. 2. Spending money for a college education or job training is a waste because a person is not going to be employed on the basis of his ability anyway.

Table 1 (cont'd.)

E. Feelings of powerlessness	E. Agreement with: 1. The ordinary person has very little control over what the politician does in office. 2. It's impossible for poor people to get out of poverty 3. One can't do anything about the future. 4. It makes little sense to go out and vote because the average man's vote doesn't count anyway. 5. Success is mostly a matter of getting good breaks. 6. You can't get aheady anymore. 7. Many times I feel that it doesn't do any good to think about what to do. You might just as well flip a coin. 8. People always take advantage of you.
F. Belief in male superiority	F. Disagreement with: 1. A good husband will help his wife with the housework.
G. Strong present-time orientation with little ability to defer gratification	G. Strong agreement with: 1. It's better to have a steady medium income job than to spend several years in school preparing for a high paying white collar job. 2. It's more important for a person to have a new car than to save his money. 3. One feels good when he can buy new things.

The one-tailed normal approximation test was used to determine differences.

Results

Twenty of the poverty traits enumerated by Oscar Lewis (1966) were re-examined and comparisons made among three economic groups: poverty-cycle, escaped-poverty and always-affluent. Since most of the families included in this study, whether poor or non-poor, were exposed to similar environments, paired-group comparisons were made with the following expectations: greater differences were expected to be found among the poverty-cycle and the always-affluent groups than among the poverty-cycle and the escaped-poverty group or the escaped-poverty and always-affluent groups. This was based on the notion that the characteristics of those escaping poverty are moving away from those persons remaining in poverty and toward those persons never experiencing poverty. The results of the analysis are reported in Tables 2, 3, and 4.

The poverty-cycle (long-term poor) and the always-affluent (non-poor) did not differ significantly on the following traits for either blacks or whites: (1) stable residence, (2) predisposition toward authoritarianism, (3) proportion of persons in the family in the younger age group, and (4) belief in male superiority. Thus these traits are not distinct characteristics of the poverty-cycle group or the long-term poor.

A summary of the number of traits for which significant differences were found among the three economic groups is reported in Table 3. Differences which were more pronounced among poor families, regardless of race, were: matriarchal families,

Table 2

Poverty Trait Indicators Where Significant Differences Were Found by Economic Situations and Race.

Poverty Trait Indicators	Comparison: Always-Affluent (N=427) vs. Poverty-Cycle (N-112)		Poverty-Cycle (N=112) vs. Escaped-Poverty (N-116)		Escaped-Poverty vs. Always-Affluent	
	Black	White	Black	White	Black	White
I. Physical Environment (Nature of the Slum Community)						
Poor Housing Condition	*				*	
Crowded Quarters		*		*	**	
Stable Residence			***	***	*	
II. Family Life (Nature of the Family)						
Matriarchal Families	*	*	*			*
Predominance of Nuclear Family	*	**	*			
Predisposition toward authoritaranism			**	***		*
Abandonment of Mothers and Children	**		*			
Extended Family Ties		**		**		

Note: * - significant at the 1 percent level.
** - significant at the 5 percent level.
*** - significant at the 10 percent level.

Table 2 (cont'd.)

Poverty Trait Indicators Where Significant Differences Were Found by Economic Situations and Race.

Poverty Trait Indicators	Comparison					
	Always-Affluent (N=427) vs. Poverty-Cycle (N-112)		Poverty-Cycle (N=112) vs. Escaped-Poverty (N-116)		Escaped-Poverty vs. Always-Affluent	
	Black	White	Black	White	Black	White
III. Relationship to Institutions (Relationship of the Subculture to the Larger Society)						
Low level of Education & Literacy	*	*		*	*	*
High proportion of persons in younger age group			***		***	
Lack of property ownership		*				*
Political Apathy	*					
Provincial & locally oriented	***				***	
VI. Psychological Characteristics: Attitudes, Values and Character of the Individual						
Strong feeling of Alienation		*	*	**		
Strong feeling of helplessness	*	*			***	***
Strong feeling of dependency		*	*	**		

Table 2 (cont'd.)

Poverty Trait Indicators Where Significant Differences Were Found by Economic Situations and Race.

Poverty Trait Indicators	Comparison					
	Always-Affluent (N=427) vs. Poverty-Cycle (N-112)		Poverty-Cycle (N=112) vs. Escaped-Poverty (N-116)		Escaped-Poverty vs. Always-Affluent	
	Black	White	Black	White	Black	White
Strong Sense of resignation & fatalism	**	*				***
Belief in male Superiority						**
Strong present-time orientation with little ability to defer gratification		*				**
Strong feeling of powerlessness	*	*	**	**		

predominance of nuclear families, low levels of education and literacy, and strong feelings of helplessness, resignation and fatalism, and powerlessness. There was no significant difference found among the number of traits on which blacks and whites differed (25 and 27 respectively).

When findings of this study were compared to those of the Kutner (1975) study, the results were similar. In both studies greater differences for both blacks and whites were found in Category IV, attitudes, values and character of the individual. The data pre-

Table 3

Summary of Poverty Traits for Which Significant Differences Were Found by Respondent and Race.

Category	Always-Affluent vs. Poverty-Cycle		Poverty-Cycle vs. Escaped-Poverty		Escaped-Poverty vs. Always-Affluent	
	Black	White	Black	White	Black	White
I	1	1	1	2	3	0
II	3	3	4	2	0	1
III	3	2	1	1	3	2
IV	3	6	2	2	1	5

Table 4

Comparison of the Results of this Study With Kutner's Study for Poverty Trait Indicators for Which Significant Differences Were Found.

Category	Results of This Study		Results of Kutner's Study		Differences	
	Black	White	Black	White	Black	White
I	1	0	1	1	0	1
II	1	1	0	0	1	1
III	1	2	1	2	0	0
IV	4	5	3	4	1	1

sented in both studies suggest that when the level of income is ignored, attitudinal differences account for the greatest differences which exist between the poor and the non-poor.

Summary

The data presented here are preliminary and offer no concrete argument either for or against the culture of poverty theory. The data do suggest, however, that some of the traits enumerated by Lewis appear to be distinctive characteristics of the poor, regardless of race. These include matriarchal families, low levels of education and literacy, strong feelings of helplessness, dependency, resignation and fatalism, and powerlessness.

Initial findings appear to differ slightly from those of other researchers who examined Lewis's theory and found little justification for the notion of a "culture" of poverty. The only explanation we can offer for the differences in our findings from those of others is the way in which our sample was drawn. The other studies used randomly selected samples of the poor and non-poor. Comparisons were made with little consideration given to the longevity of the poverty situation of the respondent, i.e., whether or not the respondents were transient-poor or long-term poor, which might affect the outcome of the analysis.

REFERENCES

Ball, R.
1968 "A Poverty Case: The Analygesic Subculture of the Southern Appalachians", American Sociological Review, 33 (December): 885-95.

Billings, D.
1974 "Culture and Poverty in Appalachia: A Theoretical Discussion and Empirical Analysis", Social Forces, 53 (December): 2.

Bird, Alan R.
1964 Poverty in Rural Areas of the United States, USDA, ERS, Resource Development Economic Division, Agricultural Economic Report 63, November, 1964.

Blau, Peter and Otis Dudley Duncan
1967 The American Occupational Structure, New York: John Wiley.

Bryan, C. Hobson and Alvin L. Bertrand
1970 Propensity for Change among the Rural Poor in the Mississippi Delta: A study of the Roots of Social Mobility, USDA, ERS, Agricultural Economics Report 185, June 1970.

Chilman, Catherine S.
1975 "Families in Poverty in the Early 1970's: Rates, Associated Factors, Some Implications", Journal of Marriage and the Family, February.

Coward, Barbara E.
1973 "The Culture of Poverty Debate: Some Additional Data", Social Problems, Vol. 21, No. 5: 621-634.

Duncan, Otis Dudley
1969 "Inheritance of Poverty or Inheritance of Race?", In "On Understanding Poverty: Perspecitves from the Social Sciences," New York: Basic Books.

Fave, L. Richard Della
1974 "The Culture of Poverty Revisited: A Strategy for Research", Social Problems, Vol. 21, No. 5: 609-621.

Fitchen, Janet M.
1974 "An Anthropological Perspective on Poverty and Anti-Poverty Programs", Human Ecology Forum, Vol. 5, No. 2, (Autumn): 22-24.

Gehlbach, Sally J.
1966 The Culture of Poverty Among American Negroes, IREC papers, Vol. 1, No. 3, Institute for Research on Exceptional Children, University of Illinois, Urbana

Galzer, Nathan and Daniel P. Moynihan
1963 Beyond The Melting Pot. Cambridge: MIT. Press.

Helmick, Sandra A.
1974 Secondary Workers' Contributions to Income Adequacy, Paper presented at the American Home Economics Association 65th Annual Meeting, Los Angeles, California.

Helmick, Sandra A., and Edward J. Metzen
1974 "Adjustments in Employment, Earnings, and Family Size as Potential Paths out of Poverty," paper presented at the Winter Meeting of Industrial Relations Research Association, San Francisco, California.

Hess, R.
1970 "The Transmission of Cognitive Strategies in Poor Families: The Socialization of Apathy and Underachievement": In Vernon Allen (ed.), Psychological Factors in Poverty, Chicago, Markham.

Irelan, L. M., O. C. Moles and R. M. O'Shea.
1969 "Ethnicity, Poverty and Selected Attitudes: A test of the Culture of Poverty Hypothesis", Social Forces 47 (June): 405-413.

Kaplain, Sylvan J. and David E. Lindstrom.
1968 Seeking More Effective Means to Overcome Poverty, proceedings of the Appalachia Conference on Research in Poverty and Development, held at Virginia Polytechnic Institute, Blacksburg, Virginia 24061, July.

Kutner, Nancy G.
1975 "The Poor vs. the Non-Poor: An Ethnic and Metropolitan - Non metropolitan Comparison", The Sociological Quarterly 16 (Spring): 250-263.

Lampman, R. J.
1971 Ends and Means of Reducing Income Poverty, Markham, Chicago, Illinois.

Larson, Lyle E.
1972 "The Influence of Parents and Peers During Adolescence: The Situation Hypothesis Revisited", Journal of Marriage and The Family, Vol. 34, No. 1 (February): 67-74.

Leeds, N.
1971 "The Concept of the Culture of Poverty: Conceptual, Logical, and Empirical Problems with Perspectives from Brazil and Peru", In Eleanor Leacock (ed.), The Culture of Poverty: A Critique, New York, Simon and Schuster.

Lewis, Hylan
1969 "The Culture of Poverty;. What Does It Matter?" In J. Alan Winter (ed.), The Poor. Grand Rapids, Michigan: Willian B. Eerdmans.

Lewis, Oscar
1966 "The Culture of Poverty", Scientific American 215 (October): 19-25.

________ LaVida: A Puerto Rican Family in the Culture of Poverty San Juan and New York, New York, Random House.

________ 1961 The Children of Sanchez. New York: Random House.

________ 1959 Five Families: Mexican Case Studies in the Culture of Poverty, New York, Basic Books.

Liebow, Elliot
1967 Tally's Corner. Boston: Little Brown.

Lipset, Seymbur M. and Reinhard Bendrix
1967 Social Mobility in Industrial Society, Berkeley and Los Angeles: Unversity of California Press.

Loomis, C. P.
1960 Social Systems: Essays on their Persistance and Change. D. Van Nostrand, Princeton, New Jersey.

McCoy, John L.
1960 Rural Poverty in Three Southern Regions: Mississippi Delta, Ozarks, and Southeast Coastal Plains, U.S. Department of Agricultural Economic Research Service, Agricultural Report 176.

Metzen, Edward, Jr.
1974 "Family Employment Intensity and Income Adequacy", paper presented at the American Home Economics Association 65th Annual Meeting, Los Angeles, California.

Miller, David B.
1976 "A Partial Test of Oscar Lewis's Culture of Poverty, Theory in Rural America", paper presented at the 73rd Annual Meeting of the Southern Association of Agricultural Scientists, 1976.

Mortimer, Joylan T.
1973 "Patterns of Intergenerational Occupational Movements: A Smallest-Space Analysis," American Journal of Sociology, Vol. 79, No. 5: 1278-99.

Moynihan, Daniel P.
1968 On Understanding Poverty, New York: Basic Books.

North Central Regional Technical Committee.
1974 Patterns of Living Related to Income Poverty in Disadvantaged Families: A Basebook, NCR Research Publication No. 217, August.

Rodman, Hyman
1971 Lower-Class Families: The Culture of Poverty in Negro Trinidad, New York, Oxford University Press.

Sandis, Eva E.
1970 "The Transmission of Mothers Educational Ambitions as Related to Specific Socialization Techniques", Journal of Marriage and The Family, Vol. 32, No. 2, (May): 250-257.

United States Department of Agriculture
1971 The People Left Behind: Four Years Later, Report prepared by ERS for the Committee on Agriculture and Forestry, November.

Valentine, Charles
1968 Culture and Poverty: Critique and Counter-Proposals. Chicago, University of Chicago Press.

Walker, M. E.
1977 "Alienation and Poverty: A Case Study," Paper presented at the Southern Association of Agricultural Scientists' Meeting, Atlanta, Georgia.

West, Jerry G.
1968 Rural Poverty: Its Meaning and Its Causes with Selected Case Studies, Agricultural Policy Institute, School of Agriculture and Life Sciences, North Carolina State University, July 1968, API Series 33.

Winter, J. Alan, editor
1971 The Poor: A Culture of Poverty or a Poverty of Culture?, Grand Rapids: Eerdmans.

COMMUNITY SATISFACTION

"Determinants of Community Satisfaction." Howard W. Ladewig, Texas A&M University, and Glenn C. McCann, North Carolina State University.

"Objective and Subjective Quality of Life Indicators: An Exploratory Analysis." Tatree Nontasak and Wolfgang Frese, Mississippi State University.

"Life Satisfaction: A Structural Systems Perspective." Nicholas A. Holt, University of Georgia.

"A Longitudinal Analysis of Satisfaction with Selected Community Services in a Nonmetropolitan Area." Sally R. Purohit and Joseph J. Molnar, Auburn University.

Determinants of Community Satisfaction

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INTRODUCTION

Formulation of national policies of growth and development to enhance the quality of life of American society generally has relied upon such objective measures as economic conditions and trends. In recent years, however, considerable debate has been directed toward the effectiveness of such policies because objective measures do not enable policy makers to fully consider the social aspects and social costs that result from the implementation of such policies.

Campbell and Converse (1972) argue that the formation of intelligent social policy requires more information about the state of the Nation than can be learned from economic data alone. They point out that although the last 25 years have been a period of unprecedented rise in national income, the rising rates of public disorder, violence, crime, and drug use have made it clear that affluence is not the total answer to society's problems.

Nor is it clear to the American public that social progress has occurred. A national survey conducted by Harris (1976) found that while 33 percent of the public believed that the quality of life has improved over the past ten years, 44 percent indicated that it has gotten worse. In 1973, by 45-35 percent, a plurality then felt that the quality of life had deteriorated over the previous decade.

To overcome this situation, Campbell et al. (1976) propose that researchers and policy makers change from a concentration on being economically "well-off" to a concern with a sense of "well-being." For them, a sense of well-being can be seen as a composite of feelings of satisfaction or dissatisfaction with a variety of more specific domains of life. Marans and Rodgers (1975) argue more specifically that it is only when the relationship of objective conditions of society to subjective experiences of individuals are understood that intelligent social policy can be drafted.

At present, little data are available concerning the relationship of objective conditions of society to subjective experiences of individuals. For example, measurement of the effectiveness of the Rural Development Act of 1972 is based on goals established by the Secretary of Agriculture. According to the Third Annual Report of the Secretary of Agriculture to the Congress (1976), status indicators for each rural development goal have been derived from national data concerned with changes in employment, income, population, housing, community services and facilities, health care, education, rural public transportation, law enforcement, and fire protection.

Although passage of the Rural Development Act of 1972 was described as "the most important single piece of legislation for rural America that the Senate has ever considered" (United States Senate, 1973:12) its impact on rural America has been difficult to assess. One explanation for this difficulty is that program data of most Federal agencies are not adequate for the purpose of annual rural development reporting. The Third Annual Report of the Secretary of Agriculture to the Congress (1976:5) explains:

> . . . given the diversity of rural settings and interest, the difficulty of defininining national needs for rural community services and facilities, and other problems, it is often difficult to relate rural development progress to objective quantitative measures. Nonetheless, policy and decision makers will have to continue to make judgments based on quantitative measures of adequacy in numerous areas . . . .

On the other hand, Brickman and Campbell (1971:288) contend that the long term effects of any societal program to ameliorate the general condition or the specific condition of particular groups cannot be understood without reference to the temporal course of subjective adaptation level, even if the specific programs limit themselves to talking about objective quantities like tons of food or number of available jobs.

OBJECTIVES

One social measure that is generating considerable interest because of its applicability to both objective conditions of society and subjective perceptions of life experiences is community satisfaction. Marans and Rodgers (1975:304) propose that community satisfaction can be seen as a component of the broader concept of the quality of life. They offer:

> If the concept of life satisfaction is a meaningful and useful one, the relation of satisfaction with the community to measures of life satisfaction would be of considerable interest . . . In comparison with many other aspects of life experiences, the community and its component parts are subject to potential influence by policy makers. To the extent that a person's satisfaction with his community can influence his satisfaction with more private spheres of life, or his satisfaction with his life in general, the importance of measures of community satisfaction is multiplied.

It is the general purpose of this study to investigate the satisfaction rural residents have for their residential environment. Knowledge of objective conditions and subjective perceptions influencing community satisfaction can provide additional information which could prove helpful in the formulation of public policy directed toward improved quality of life in rural America.

PREVIOUS STUDIES

From a historical perspective, measurement of the affect of people's level of community satisfaction on their life quality is a relatively new endeavor. In integrating the findings of some of these studies, Marans and Rodgers (1975:301) report that most people, including many of those living in substandard environments, tend to be fairly content with the community in which they live. The social setting, including interpersonal relations and living in single family housing, are salient factors influencing an individual's level of satisfaction with his residential community. Other important factors which are related to general community satisfaction are the physical conditions in the environment and the convenience of having nearby public and private facilities and services.

Three independent studies by Marans and Rodgers (1975) generally support the basic contention that objective measures of environmental attributes are inadequate in and of themselves as indicators of life quality. Only as their relationship to subjective indicators is understood do objective measures begin to take on human meaning and provide reliable guidance for public policy. Specifically, Marans and Rodgers found that attitudes toward nine assessments of public services and facilities were strongly related to overall satisfaction with the community. Conversely, person characteristics had a weak influence on community satisfaction. In addition, substantial differences in community satisfaction were expressed by residents living in communities of different sizes.

Focusing on one aspect of community satisfaction - satisfaction with services in rural areas - Rojek et al. (1975) found such satisfaction to be multidimensional. Factor analysis of intercorrelations revealed four distinct clusters of local community services (referred to as medical, public, commercial, and educational). In a second part of the study, controlling for residential location, 11 economic, social, and demographic variables were examined via analysis of covariance for each of the four satisfaction factors. An analysis of the results indicated that relationships between satisfaction with services and the objective indicators within each of the residential strata examined were essentially the same. In addition, the explanatory power of the objective correlates to satisfaction were quite low. The authors concluded that the use of only objective information to measure the social conditions of human existence appeared to be inadequate.

Goudy (1977), however, has challenged studies on satisfaction with services as being too narrow in scope. Instead, he hypothesized that perceptions of social dimensions, such as the distribution of power, citizen participation, and commitment to the community are more efficient predictors of community satisfaction than are perceptions of service adequacy. A study by Goudy of 4,627 residents of 27 incorporated communities in a six-county region of North-Central Iowa found that social dimensions were more important than service and opportunity scores in explaining satisfaction with the local community. He recommended that if future studies are to be effective, they must include respondents' evaluations of the variables that are of greatest salience to their reported satisfaction levels.

THEORETICAL FRAMEWORK

An investigation of one's satisfaction with one's residential environment must take account of the transient nature of satisfaction. That is, as one's satisfaction with one's community increases, subjective standards for gauging satisfaction will increase. Brickman and Campbell (1971:287) explain that the subjective experience of stimulus input is a function not of the absolute level of the input but of the discrepancy between the input and past levels.

This tendency for stimuli to lose its effectiveness with repetition or duration is referred to as habituation and is a fundamental postulate of adaptation-level theory. According to Helson (1964:37);

> . . . An individual's attitudes, values, ways of structuring his experiences, judgments of physical, aesthetic, and symbolic objects, intellectual and emotional behavior, learning, and interpersonal relations all represent modes of adaptation to environmental and organismic forces . . . Stimuli impinge upon organisms already adapted to what had gone before, and internal states depend upon previously existing internal conditions as well as external inciters to action.

Few studies of community satisfaction have utilized a conceptual framework which enables the incorporation of the structural concept "community" and the social-psychological concept "satisfaction." If one perceives an individual's satisfaction with his residential community as being indicative of his adaptation level to the community, the theory of interaction outcomes as formulated by Thibaut and Kelley (1959) can be utilized to guide construction of a causal model of community satisfaction and the stimuli that influence it. Although formulation of the theory of interaction outcomes was based on a dyad, Thibaut and Kelley (1959:6) believe the concepts utilized in their analysis have general applicability beyond the dyad.

The theory utilizes the concept "comparison level" to represent an individual's adaptation level to instigated outcomes of social realtionships. A comparison level is defined as the standard or reference point against which an individual evaluates the attractiveness of a relationship or how satisfactory it is. The comparison level can be represented as the neutral point on a continuum ranging from dissatisfaction to satisfaction. Outcomes that fall above the comparison level would be relatively satisfying and attractive to the individual; outcomes that fall below the comparison level would be relatively unsatisfactory and unattractive. The location of the comparison level on an individual's scale of outcomes will be influenced by all the outcomes known to the individual, either by direct experience or symbolically (Thibaut and Kelley, 1959:80).

The comparison level depends in part upon the individual's conception of his own power, his ability to cope with the contingent demands of others, and the realms over which he believes his own causal efficacy extends. The individual is especially sensitive to variations in outcomes subject to his own control and relatively insensitive to variations caused by others and beyond his control. Outcomes the individual has commonly experienced are more likely to be perceived as within the realm of self-determination than those he has rarely experienced or heard about.

The comparison level is largely an indication of what the individual feels he deserves and only in small part an indication of what he expects or anticipates on the basis of all outcomes he has experienced. This is because outcomes are weighted according to perceived responsibility for them. Thibaut and Kelley (1959:98) note also that dissatisfaction with failing to attain a desired state is less if there was little optimism about attaining it in the first place.

CAUSAL MODEL

Guided by the Thibaut-Kelley theoretical orientation, a causal model of community satisfaction is presented, Figure I. Community satisfaction represents an individual's adaptation level to his residential environment.

(Figure I about here)

The model depicts community satisfaction as being influenced by the comparison level an individual uses in evaluating his circumstances in relation to those he has experienced in the past. The location of the comparison level on an individual's scale of outcomes is influenced by all the outcomes known to him. The comparison level depends upon the type of environment in which an individual resides and by differences in individual perceptions of his own power or control over his fate. Control over one's fate, in turn, is influenced by specific features of one's own background such as personal characteristics.

According to Heise (1975:13), causal inference begins with the assumption that any event may be the cause of another event. Relations are then eliminated that are impossible or implausible in particular circumstances. Thus, a path model is developed by eliminating the relations that do not appear to exist and retaining those that one is uncertain about and those known to exist.

Since one cannot be certain of the relationship of personal characteristics to the comparison level or to community satisfaction, the model in Figure I proposes that personal characteristics influence both the comparison level and community satisfaction. In interpreting the model, one should remember that causal modeling cannot prove causality. Rather, it is a technique for selecting those variables that are potential determinants of the effects--and then attempting to isolate the separate contributions to the effects made by each cause (Asher, 1976).

METHODOLOGY

Source of Data

The data for this study were taken from Regional Technical Cooperative Project S-79. Entitled "Rural Development and the Quality of Life in the Rural South," the study was conducted by the Agricultural Experiment Stations of eight southern states and Puerto Rico in cooperation with the Cooperative State Research Service of the United States Department of Agriculture. States participating in the study include Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.

Data were obtained from a standarized field schedule administered to household heads (or spouse of head) in 1972-73. The data are sampled from open-country households in low-income counties in the participating states. An area probability sampling design, developed by the Department of Experimental Statistics at North Carolina State University was used to survey the region. According to Cleland (1962:13):

> The final design of the sample was such that each county included would have a representative sample, the low-income counties in each state would be represented, each subregion within the region, and finally, the low-income counties in the entire region would be represented.

A total of 2,626 individuals were interviewed. Various analysis restrictions diminished the sample size. First, perceptions of environmental attributes were not obtained from any respondent who first came to the county less than eight years prior to the survey or who had spent less than five of the last ten years in the county. This reduced the sample size to 2,164.

Although the sampling procedure was based on open-country households, some states included respondents residing in incorporated areas. A second restriction, to include only open-country households, reduced the sample size to 1,846. Missing data reduced the final sample size to 1,783.

Measurement

This study is concerned with the effects of objective conditions and subjective experiences on community satisfaction. Since only open-country households were interviewed, the county is utilized as the community frame of reference. Bonjean et al. (1969:160) provide several reasons to support the use of the county as the unit of analysis and as a measure of the community.

> 1. The county is the one administrative unit below the level of the State for which the greatest amount of comparable data are available.

2. The use of city data alone eliminates the rural population . . . (because) comparable data are readily available only for cities larger than 25,000.

3. The political, social, economic, cultural, and functional boundaries of cities and villages are no more sharply delineated than are those of counties.

Operational Definitions

The variables utilized to operationalize the causal model were selected on the basis of previous research findings or derived from factor analysis. Operational definitions of community satisfaction, the objective environment, and person characteristics were obtained from previous research studies. Factor analysis, in turn, was used to establish indicators of the comparison levels individuals utilized in evaluating their residential circumstances and control over their own fate.

Community Satisfaction

Community satisfaction, the dependent variable of this study, was operationalized by asking respondents to rate the county as a place to live--all things considered--on a five point scale ranging from one (very good) to five (poor). Therefore, the higher the score, the greater the dissatisfaction with the county as a place to live. Table I reveals the distribution of responses by rating of community satisfaction. The distribution is similar to those of other studies of community satisfaction in that people tend to be satisfied with their residential environment.

(Table I about here)

Objective Environment

One measure of the type of environment in which one resides is the distribution of households by size of income. Referred to as a coefficient of income inequality for a Lorenz curve (Stigler, 1966:293), this distribution is based on a cumulative percentage of income of families ranked from lowest to highest plotted against their cumulative number. The coefficient has a maximum value of 1.0 (when the lowest 99.999 percent received no income) and a minimum value of zero (when all incomes are equal). The higher the coefficient, the greater the inequality.

Person Characteristics

Person characteristics were developed from attributes of each respondent for five variables: educational attainment, age, total family income, social participation score, and type of communication items owned. Educational attainment, age, and total family income were straightforward and required no computations.

The social participation score was the extent of voluntary participation in associations called formal organizations. Scores were based on participation during the previous 12 months and could range from 1 to 6 for each organization to which a respondent belonged. Score values were assigned as follows:

Score Value	Activity
1	Member of an organization
2	Attended at least 25 percent of the meetings of the organization
3	Served as an officer or committee member of that organization

A respondent's social participation score was then determined by summing the scores for all organizations to which the respondent belonged. The higher the score, the more involved the respondent in voluntary associations.

A measure of communication items owned was utilized to provide an indication of an individual's access to the world around him. Thus, the higher the score the more information one has access to when comparing his situation to that of others. The communication score was based on a Guttman-type scale of the family's possessions of the following items:

Item	Score
Possesses none of the four items	0
Possesses only TV	1
Also possesses telephone	2
Also receives daily newspaper	4
Also receives other magazines	8

The communication score scale had a coefficient of reproducibility of .90 and a coefficient of scalability of .59.

Comparison Level Indicators

Indicators of comparison levels were based on Likert-type attitude statements which were broad in scope and designed to cover a wide range of community phenomena. Respondents were asked to assess the current situation in the county for each of twenty items on a five point scale ranging from one (very good) to five (poor). These items were quite diverse in nature and included many attributes of the environment. Scores for these items were based on weights derived from common factor analysis. The correlation matrix for the 20 comparison-level items (Table II) were factor analyzed from their intercorrelations to determine whether subjective experiences covary over a series of respondents on one occasion. It was found that the comparison level variables could be accounted for adequately by three factors. Labeled life quality, institutional services, and political efficacy, these three factors and their loadings are presented in Table III.

(Table II about here)
(Table III about here)

The three comparison level factors were submitted to a promax rotation which first rotates to an orthogonal varimax rotation and then relaxes the orthogonality of the factors to better fit a simple structure. Correlation of the three factors after oblique rotation determined that the data patterns themselves have variance in common to the degree measured by the factor correlations squared and that the factors are not naturally near orthogonal. It was concluded that the promax rotated factor pattern matrix of the oblique factor solution best represents the simple structure. That is, the oblique rotation better maximizes the number of high loadings on each factor, while minimizing the number of factors with high loadings for each scale. Therefore, the indicators of comparison level and the subsequent index scores are based on an oblique rotation of the data matrix. One may interpret that the higher the score, the more dissatisfied the respondent with the outcome of that aspect of his residential environment.

Fate Control

For this study, one's perceptions of his control over his own fate was operationalized by a six item index. Each item was scored one point if the respondent agreed with the item, two points for undecided and three points if the respondent disagreed with the item. Therefore, the more items agreed with, the higher one perceives his fate control to be. The six items and their means, standard deviations, and product-moment correlation coefficients are presented in Table IV.

(Table IV about here)

The initial unrotated factor analysis for the fate control variables are presented in Table V. Although the initial analysis called for two factors, the eigenvalues and size of factor loadings indicate that the index taps a single dimension. Therefore, the scoring coefficients for the fate control factor are based on the unrotated orthogonal factor matrix.

(Table V about here)

FACTOR SCORES

To derive factor scores, each variable was weighted proportionately to its involvement in a factor; the more involved a variable, the higher the weight. To determine the score for a respondent on a factor, the individual response on each variable was multiplied by the factor weight for that variable. The sum of these weight-times-response products for all the variables yields the factor score (Rummel, 1970:150). Many approaches are available to determining factor scores. For common factor analysis, however, common factor score regression estimates seem to be most appropriate and are the bases for factor scores in this study. Scores for the comparison-level factors are presented in Table VI and for the fate control in Table VII.

(Table VI about here)
(Table VII about here)

FINDINGS

The causal model depicting the sources of influence on community satisfaction presented in Figure I may be divided into three distinct effects or outcomes: effects on fate control, satisfaction with different attributes of the environment, and satisfaction with the environment in which one resides. Each effect is assumed to depend both on all previous outcomes in the model and on exogenous variables. Therefore, three separate regression models must be formulated-one for each effect-- in order to determine the direct and indirect effects on community satisfaction.

A product-moment correlation matrix was computed for the variables in the path model to determine the size of their associations and is presented, Table VIII. An examination of the correlation coefficients between independent variables indicates that none of the correlations is extremely large.

(Table VIII about here)

The results of the multiple regressions specified by the general path model of Figure I are summarized in Table IX. An inspection of the results indicates that life quality and communications score were the only variables to be significantly related to community satisfaction when controlling for all variables in the model.

(Table IX about here)

The construction of a path model begins with the assumption that variables between paths have a statistically significant relationship. If two variables are not significantly related, one cannot assume that a change in the first variable will cause a change in the second variable. Heise (1975:195) suggests that eliminating relationships on the basis of near-zero coefficients permits the simplification of the causal structure. He recommends the remaining coefficients in the simplified model be reestimated to improve their precision.

Figure II represents a more parsimonious model of the effects of selected variables on community satisfaction. The model depicts one's community satisfaction as being dependent upon one's communications score and one's satisfaction with life quality in the community. Satisfaction with life quality, in turn, is influenced by the level of income inequality in the community and one's age, level of social participation, and communications score.

(Figure II about here)

It may be recalled that the magnitude of an indirect effect is the summation of the products of corresponding path coefficients between these variables. The direct and indirect effects of the path coefficients illustrated in Figure II are presented in Table X.

(Table X about here)

Elimination of various paths had little effect on the size of R^2. The more complex model presented in Table IX accounted for approximately 23 percent of the variation in community satisfaction. In contrast, the simpler model (Table X) accounted for 22 percent of the variation in community satisfaction. Thus, the reduction in model complexity was not accompanied by much loss of information.

An inspection of the various effects shown in Table X discloses that the most immediate determinant of community satisfaction is life quality with a positive path coefficient of .601 followed by communications score with a negative coefficient of .101. The indirect effect of communications score was a negative .036 indicating that the correlation between communications score and community satisfaction was not mediated primarily through other variables in the model.

SUMMARY AND CONCLUSIONS

This study was directed toward examining the influence of selected objective conditions and subjective experiences on the community satisfaction of residents of low-income counties of the rural South. One reason for the study was to provide data on subjective experiences which could be utilized in the formation of public policies and programs directed toward the development of rural America. At present, such policies and programs rely primarily on information about certain populations and subpopulations rather than information about how people within those populations feel about their circumstances (Rodgers and Converse, 1975). The findings that satisfaction with life quality and type of communication contacts accounted for 22 percent of the variation in community satisfaction should add to the growing body of information on factors influencing community satisfaction.

A second reason for the study was that few attempts have been made to utilize a conceptual framework which enables the incorporation of the structural concept "community" and the social-psychological concept "satisfaction." Guided by the theory of interaction outcomes as formulated by Thibaut and Kelley (1959), a path model was constructed which followed the basic contention of Marans and Rodgers (1975) that objective measures of environmental attributes are inadequate in themselves as indicators of life quality. Only as their relationship to subjective indicators are understood do they begin to take on human meanings and provide reliable guidance for public policy. Although the variables used to operationalize the path model should be interpreted as exploratory in nature, the model does provide a framework from which to examine the contributions of other potential determinants of community satisfaction. As indicated by Brickman and Campbell (1971:288): "We may take it as given that if a society in which people are happy is possible at all, it will be possible only if it incorporates an understanding of adaptation-level phenomena."

A final consideration refers to rural development. Havens (1971) has suggested that two conditions necessary for societal development to occur are communications and relative deprivation. Communication contacts must be present if individuals are to gain new knowledge of new alternatives to the present situation. Sources of knowledge of new alternative forms of behavior provide the basis for relative deprivation. If an individual does not feel deprived or concerned about improving his present condition, there is no logical basis for expecting an individual to be interested in change. This study, however, found that those who had more types of communication contacts were more satisfied with their residential environment than those who had fewer types of communication contacts. While this study does not deny the existence of a relationship between communication contacts and relative deprivation, it does suggest that in low-income counties of the rural South, voluntary organizations to which individuals belong may be perceived as having limited ability to influence decisions affecting the quality of life in the community. Thus, as indicated by Thibaut and Kelley (1959:98), dissatisfaction with failing to attain a desired state is less if there is little optimism about attaining it in the first place.

REFERENCES

Asher, Herbert B.
1976 Causal Modeling. Beverly Hills: Sage Publications.

Bonjean, Charles M., Harley L. Browning, and Lewis F. Carter
1969 "Toward comparative community research: A factor analysis of United States counties." The Sociological Quarterly 10 (Spring): 157-176.

Brickman, Philip and Donald T. Campbell
1971 "Hedonic relativism and planning the good society." Pp. 287-302 in M. H. Appley (ed.), Adaptation-Level Theory. New York: Academic Press.

Campbell, Angus and Philip E. Converse
1972 The Human Meaning of Social Change. New York: Russell Sage Foundation.

Campbell, Angus, Philip E. Converse and Willard L. Rodgers
1976 The Quality of American Life. New York: Russell Sage Foundation.

Cleland, C.L.
1962 "A regional study of adjustment in southern low-income rural areas." Proceedings of the Association of Southern Agricultural Workers.

Goudy, Willis J.
1977 "Evaluations of local attributes and community satisfaction in small towns." Rural Sociology 42 (Fall): 371-382.

Harris, Louis
1976 "Polls indicate quality of life to become major issue." The News and Observer, Raleigh, N. C., November 8: 7.

Havens, A. Eugene
1971 "Quest for societal development." Pp. 70-93 in G. Beal, R. Powers, and E. Coward, Jr. (eds.), Sociological Perspectives of Domestic Development. Ames, Iowa: The Iowa State University Press.

Heise, David R.
1975 Causal Analysis. New York: John Wiley and Sons.

Helson, Harry
1964 Adaptation-Level Theory. New York: Harper and Row Publishers.

Marans, Robert W. and Willard Rodgers
1975 "Toward an understanding of community satisfaction." Pp. 299-352 in A. H. Hawley and V. P. Rock (eds.), Metropolitan America in Contemporary Perspective. New York: Halstead Press.

Rodgers, Willard and Philip E. Converse
1975 "Measures of the perceived overall quality of life." Social Indicators Research 2 (September): 127-152.

Rojek, Dean G., Frank Clemente, and Gene F. Summers
1975 "Community satisfaction: A study of contentment with local services." Rural Sociology 40 (Summer): 177-192.

Rummel, R. J.
1970 Applied Factor Analysis. Evanston: Northwestern University Press.

Stigler, George J.
1966 Theory of Price. New York: The Macmillan Company.

Thibaut, John W. and Harold H. Kelley
1959 The Social Psychology of Groups. New York: John Wiley and Sons, Inc.
U.S. Department of Agriculture (U.S.D.A.), Office of the Secretary
1976 Rural Development Goals. Third Annual Report of the Secretary of Agriculture to the Congress
United States Senate
1973 Guide to the Rural Development Act of 1972. Prepared for the Subcommittee on Rural Development of the Committee on Agriculture and Forestry, United States Senate. Washington, D.C.: U.S. Government Printing Office.

TABLES

Table I. Percentage Distribution of Respondents by Rating of Community Satisfaction

Rating	Percent (N = 1846)
Very good	30.8
Pretty good	41.0
Only fair	18.3
Poor	3.9
Undecided	6.0
	100.0

Table IV. Product-Moment Correlation Coefficients, Means, and Standard Deviations for Items Measuring Fate Control

	Item						$\bar{X}$	s
1	Live for today	1					1.79	0.95
2	Lot of the average man is getting worse	.32	2				1.73	0.90
3	Hardly fair to bring children into the world	.23	.37	3			1.96	0.93
4	Don't know who to count on	.22	.34	.31	4		1.50	0.84
5	Little use writing to public officials	.20	.32	.27	.35	5	1.68	0.86
6	Things have gone against me in life	.21	.24	.26	.19	.16	2.50	0.83

Table V. Initial Unrotated Orthogonal Factor Matrix

Item	Factor Loadings		h^2
	Factor 1	Factor 2	
1 Live for today	.444	.097	.206
2 Lot of the average man is getting worse	.605	.020	.367
3 Hardly fair to bring children into the world	.542	.033	.295
4 Don't know who to count on	.541	-.107	.304
5 Little use writing to public officials	.497	-.126	.263
6 Things have gone against me in life	.391	.123	.168
% Total Variation	15.50	.53	16.03
% Common Variation	96.69	3.31	100.0
Eigenvalues	1.550	0.053	

Table II. Product-Moment Correlation Coefficients, Means, and Standard Deviations for Items Measuring Perceptions of Environmental Attributes

Item*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	$\bar{X}$	s
1																				3.13	1.20
2	.59																			3.32	1.14
3	.20	.18																		2.81	1.37
4	.11	.07	.05																	2.34	1.22
5	.18	.17	.06	.14																3.04	1.27
6	.15	.14	.17	.13	.19															2.73	1.41
7	.16	.15	.28	.10	.09	.30														2.90	1.27
8	.14	.16	.15	-.02	.13	.08	.14													3.23	1.29
9	.12	.06	.03	.21	.14	.10	.15	.08												2.68	1.34
10	.16	.12	-.01	.31	.13	.12	.15	.07	.33											2.58	1.21
11	.14	.11	-.04	.33	.15	.11	.13	.03	.31	.44										2.88	1.40
12	.13	.19	.12	.02	.15	.17	.15	.13	.11	.22	.22									3.43	1.28
13	.12	.13	.18	.02	.14	.19	.19	.15	.13	.08	.06	.11								2.74	1.30
14	.20	.13	.14	.03	.14	.14	.12	.08	.16	.13	.14	.16	.16							3.28	1.32
15	.09	.07	.01	.24	.09	.12	.09	.02	.18	.25	.24	.03	.16	.20						2.53	1.23
16	.13	.12	.12	.08	.10	.12	.11	.16	.12	.11	.14	.16	.11	.12	.16					2.79	1.26
17	.15	.11	.00	.28	.16	.15	.15	.01	.22	.28	.34	.09	.13	.14	.26	.16				2.63	1.18
18	.15	.09	.07	.30	.16	.16	.15	.02	.20	.29	.44	.16	.06	.21	.17	.13	.33			2.93	1.42
19	.18	.16	.15	.19	.16	.20	.21	.10	.17	.23	.29	.17	.11	.21	.16	.17	.26	.40		2.97	1.36
20	.08	.04	-.14	.34	.13	.07	.04	-.04	.23	.28	.33	.02	.07	.11	.18	.08	.35	.34	.29	2.45	1.17

Item*

1. Government
2. Politics
3. Schools
4. Job Training
5. Agriculture and Land Use
6. Medical Services
7. Welfare Programs
8. Obey Laws
9. Roads and Transportation
10. Wage Income
11. Job Opportunity
12. Real Income
13. Church and Religion
14. Recreation Opportunities
15. Public Utilities
16. Environment
17. Good Housing
18. Opportunity for Young
19. Opportunity for Elderly
20. Opportunity for Blacks

Table III. Unrotated orthogonal factor matrix

		Factor Loadings			
		Factor 1	Factor 2	Factor 3	h^2
1	Government	.413	.408	-.385	.485
2	Politics	.360	.446	-.384	.476
3	Schools	.187	.417	.188	.244
4	Job Training	.444	-.260	-.056	.268
5	Agriculture and Land Use	.329	.107	-.008	.120
6	Medical Services	.347	.203	.204	.204
7	Welfare Programs	.353	.252	.240	.246
8	Obey Laws	.173	.281	.073	.114
9	Roads and Transportation	.428	-.117	.044	.199
10	Wage Income	.537	-.192	-.041	.326
11	Job Opportunity	.593	-.281	-.048	.433
12	Real Income	.318	.178	.072	.138
13	Church and Religion	.267	.214	.180	.149
14	Recreation Opportunities	.345	.136	.079	.144
15	Public Utilities	.380	-.115	.050	.160
16	Environment	.294	.115	.080	.106
17	Good Housing	.514	-.187	-.012	.300
18	Opportunity for Young	.564	-.187	.029	.354
19	Opportunity for Elderly	.522	.005	.086	.279
20	Opportunity for Blacks	.452	-.369	-.093	.349
% Total variation		33.19	12.60	5.15	50.94
% Common variation		65.16	24.73	10.11	
Eigenvalues		3.32	1.26	0.52	

Table VI. Scoring Coefficient Matrix of Comparison Level Indicators

Item	Score Coefficients Factor 1	 Factor 2	 Factor 3
1 Government	.025	-.075	-.397
2 Politics	.000	-.079	-.391
3 Schools	-.040	-.215	-.052
4 Job Training	.146	.029	-.004
5 Agriculture and Land Use	.044	-.076	-.063
6 Medical Services	.029	-.178	-.011
7 Welfare Programs	.017	-.211	-.009
8 Obey Laws	-.015	-.122	-.058
9 Roads and Transportation	.104	-.050	-.002
10 Wage Income	.166	-.017	-.031
11 Job Opportunity	.225	.011	-.018
12 Real Income	.024	-.123	-.053
13 Church and Religion	.012	-.155	-.015
14 Recreation Opportunities	.042	-.114	-.039
15 Public Utilities	.096	-.043	.007
16 Environment	.033	-.098	-.030
17 Good Housing	.150	-.024	-.014
18 Opportunity for Young	.173	-.051	-.006
19 Opportunity for Elderly	.108	-.124	-.030
20 Opportunity for Blacks	.187	.083	.011

Table VII. Scoring Coefficient Matrix for Fate Control

	Item	Score Coefficients
1	Live for today	.174
2	Lot of the average man is getting worse	.284
3	Hardly fair to bring children into the world	.233
4	Don't know who to count on	.234
5	Little use writing to public officials	.204
6	Things have gone against me in life	.148

Table VIII. Product-Moment Correlation Coefficients for all Variables in the Path Model

	Item										
1	Income Inequality	1									
2	Age	-.02 N=1783	2								
3	Education	-.08* N=1783	-.36* N=1783	3							
4	Social Participation	.00 N=1783	-.05 N=1783	.27* N=1783	4						
5	Communication Score	.02 N=1783	-.03 N=1783	.40* N=1783	.32* N=1783	5					
6	Total Family Income	-.03 N=1783	-.39* N=1783	.47* N=1783	.23* N=1783	.40* N=1783	6				
7	Fate Control	-.01 N=1744	-.07* N=1744	.36* N=1744	.19* N=1744	.30* N=1744	.30* N=1744	7			
8	Life Quality	.10* N=1783	-.06* N=1783	-.06* N=1783	-.12* N=1783	-.10* N=1783	-.05 N=1783	-.07* N=1744	8		
9	Institutional Services	-.05 N=1783	.06* N=1783	-.04 N=1783	.02 N=1783	.00 N=1783	-.07* N=1783	.12* N=1744	-.44* N=1783	9	
10	Political Efficacy	-.03 N=1783	.03 N=1783	-.03 N=1783	.04 N=1783	.01 N=1783	-.03 N=1783	.14* N=1744	-.36* N=1783	.65* N=1783	10
11	Community Satisfaction	.01 N=1783	-.02 N=1783	-.07* N=1783	-.13* N=1783	-.13* N=1783	-.06* N=1783	-.10* N=1744	.46* N=1783	-.24* N=1783	-.21* N=1783

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*Significant at the .01 level

Table IX. Path Coefficients for Variables at each Effect of the Path Model

INDEPENDENT VARIABLES	DEPENDENT VARIABLES				
	Fate Control	Life Quality	Institutional Services	Political Efficacy	Community Satisfaction
Income Inequality	X^a	.091*	-.048*	-.032	X^a
Age	.073*	-.073*	.010	-.003	-.002
Education	.210*	-.003	-.062*	-.066*	-.003
Social Participation	.042	-.089*	.023	.033	-.062
Communication Score	.103*	-.050	.010	-.004	-.079*
Total Family Income	.123*	-.015	-.072*	-.041	-.010
Fate Control		-.040	.168*	.169*	
Life Quality					.559*
Institutional Services					-.072
Political Efficacy					-.029
F Value	76.34*	9.78*	8.82*	7.59*	64.82*
R^2	.18	.038	.034	.030	.226

X^a No path hypothesized

* Significant at the .01 level

Table X. Direct and Indirect Effects on Community Satisfaction

Variable	Direct Effect	Indirect Effect	Total Direct and Indirect Effect
Communication Score	-.101*	-.036	-.137
Age	X^a	-.037	-.037
Social Participation	X^a	-.056	-.056
Income Inequality	X^a	-.055	.055
Life Quality	.601*	---	.601
F Value	251.34		
R^2	.220		

X^a No path hypothesized

* Significant at the .01 level.

FIGURES

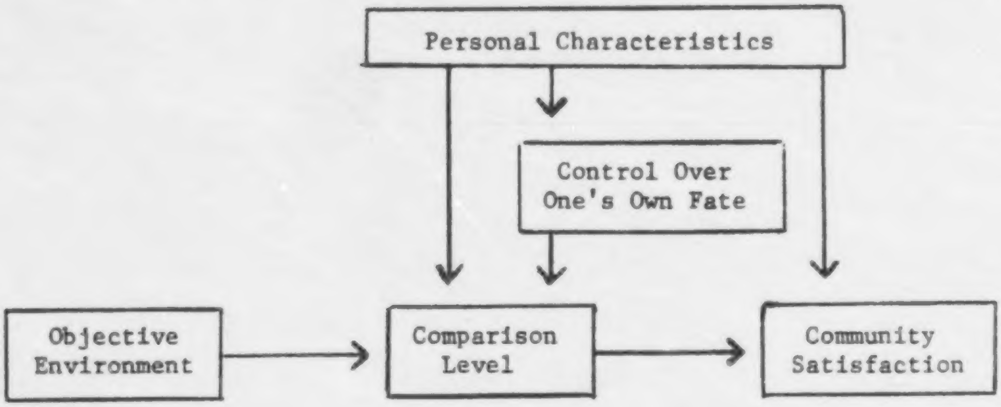
Personal Characteristics
Control Over One's Own Fate
Objective Environment
Comparison Level
Community Satisfaction

Figure I. Causal Model of Community Satisfaction

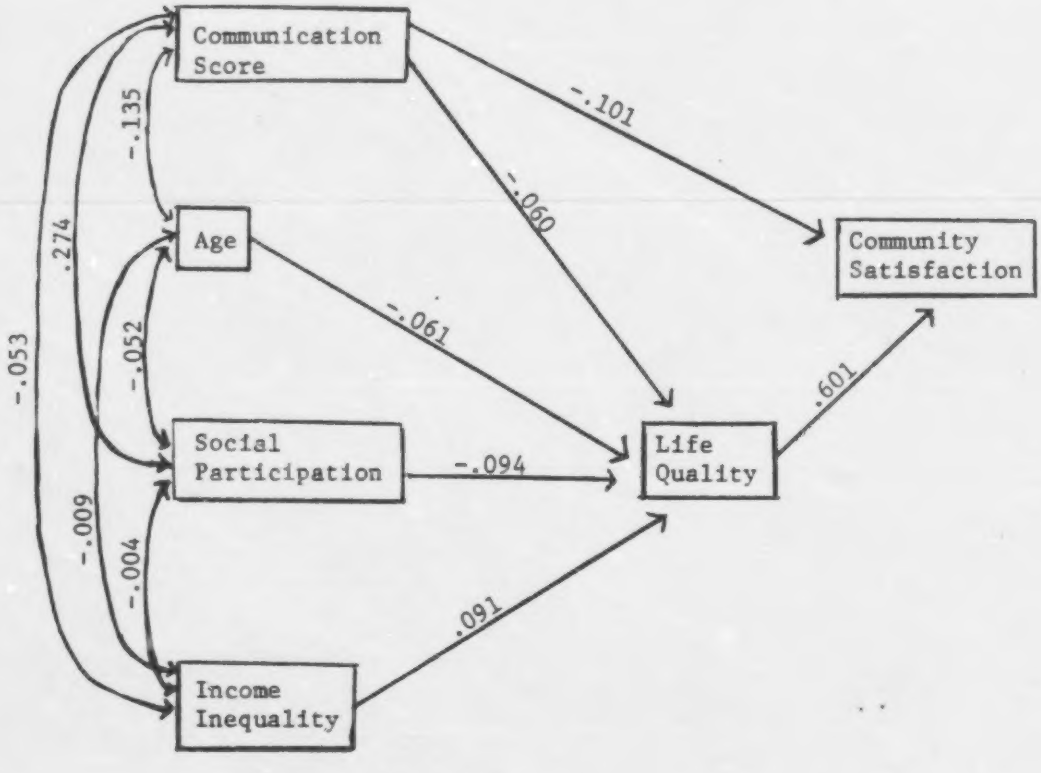
Communication Score
Age
Social Participation
Income Inequality
Life Quality
Community Satisfaction
-.101
-.060
-.061
-.094
.091
.601
-.135
.274
-.053
-.052
-.009
-.004

Figure II. Effects of Objective Conditions and Subjective Experiences on Community Satisfaction

OBJECTIVE AND SUBJECTIVE QUALITY OF LIFE INDICATORS: AN EXPLORATORY ANALYSIS

by Tatree Nontasak
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In practically all aspects of life the United States has long been used as a standard for success. For many years, American society has been known, and criticized, for its affluence. However, as impressive as this material wealth is, the nationwide trend in reported level of happiness in the U.S. shows a gradual consistent decline (Campbell et. al., 1976:26). Many social scientists attribute this decline to the numerous social problems which have accompanied the rising affluence, for example, crime, drug addiction, civil disorder, violence, environmental pollution, alienation, and widespread dissatisfaction with aspects of life (Hobbs, 1970; Sheldon and Moore, 1968; Gross, 1969; Liu, 1973, 1974, 1975; Campbell et. al., 1976; and Ringen, 1976). This points the way to an important question: Can quality of life be measured in terms of material wealth? Or in Rostow's (1967) terms: Does the stage of high mass consumption signify a high quality of life?

The importance of the quality of life problem has not only been noted by social scientists but also by many politicians including Johnson, Nixon, Ford and Mondale. Furthermore, policy makers who presume to define national goals are increasingly emphasizing the subjective aspects of life over material gains. It can be seen that consideration of the environment, education, individual satisfactions and other factors which shape the quality of life of the individual are now considered important requirements in many public policy decisions.

Studies dealing with the relationship between objective and subjective measures of quality of life yield mixed findings. According to Stagner, effective use of psychological indicators (subjective measures of quality of life) will require that they be analyzed in relation to the objective data already available (1972:59). That is, indices of satisfaction are needed but these must be interpreted in the light of other data. Campbell maintains that the correspondence between the two measures are rather weak in some instance (1972:442). Likewise, Coleman, studying four Kentucky mountain counties, suggests that objective indicators might be only loosely, if at all, related to how people feel about their living situation (1975:1). Rojek et al (1975), studying four rural Illinios counties, found low correlations between subjective and objective measures of quality of life in the areas of medical, educational and commercial services. Schneider (1976), after studying 15 of the largest U.S. cities, also concludes that there is little congruence between objective and subjective quality of life measures.

Several researchers, on the other hand, find positive relationships between objective and subjective measures of quality of life. For example, Coughenour notes that improvement in per capita income and other objective measures translates into an improvement in perceived quality of life in four Kentucky counties (1976:1). Frese, examining data from open country residents in Mississississippi (forthcoming), finds that objective and subjective measures of changes in quality of life, in general, show similar trends. McGranahan, et. al., (1975:31,45) in their study of community services in southwestern Wisconsin obtain moderate to high correlations between objective and subjective measures of community services, retail services, police protection and ambulance services. However, they get low or no correlations between objective and subjective ratings of schools and sewage treatment systems. Chrisenson (1977), studying respondents in 100 North Carolina counties, notes a strong positive relationship between community satisfaction and the quality and availability of services. Dillman and Tramblay (1977:115) support a high degree of congruence between objective and subjective quality of life indicators when they state that "...rural people's subjective assessments are strikingly consistent with the objective conditions of their environment."

Purpose

Due to the indecisive nature of the results reported in the literature, this paper further explores the degree of congruence between objective and subjective quality of life measures using data collected from rural household heads in eight Southern states. More specifically, we will examine the relationship between objective and subjective family quality of life indicators and then compare each one of these to a subjective county quality of life indicator. The importance of exploring the relationship between objective and subjective quality of life indicators has been pointed out by Campbell et al., "...the central issue confronting any examination of the perceived quality of life involves the relationship between subjective and objective indicators of well-being" (1976:474). This notion is supported by Schneider (1976), Coleman (1975), Coughenour (1976), Stagner (1972), and Liu (1975).

The Data

The data used in this paper are taken from the S-79 regional research project, entitled "Rural Development and Quality of Life in the Rural South." In the S-79 study, two thousand six hundred and twenty-eight respondents (households heads or homemakers) in thirty-two counties in eight Southern states were interviewed during 1972-73. In this analysis we include only the household heads reducing our sample to 1630. Of the 1630 household heads, 1218 were white, 369 black and 43 American Indians.

An area sampling procedure was employed to obtain the sample of households to be interviewed. The thirty-two counties were divided into small-area sample segments.* Next, a random selection of the small-area segments was obtained and within these segments a random sample of households was drawn. The number of households sampled in each segment was determined by a quota system set forth in the the S-79 guidelines.** The states participating in the S-79 project were Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.

For this paper, missing values were replaced with random numbers generated to conform to the distribution (mean and standard deviation) of the obtained valued for each variable. Missing values ranged from a low of less than one-half of one percent to a high of 18 percent, the latter being unusual in that most of the variables had less than six percent of their values missing.

Operationalization of the Variables

The operational scheme for the concepts in this study is as follows:

I) Objective Family Quality of Life (OFQOL)

This index was constructed by principle component factor analysis without rotation using the following items: a household's socioeconomic status, level of living items possessed, and leisure time participation. Each of these three OFQOL index items are in turn made up of more than one indicator. Socieconomic status, the level of living scale and the leisure time participation item were operationalized in the following manner:

1) Socioeconomic Status (SES)

Socioeconomic status scores were derived by converting the years of educational attainment of the household head, the family income, and the occupational prestige score of the household head into the U.S. census scoring procedures and computing an average score for each household. The census procedure converts each of the three SES indicators to a scale ranging from 0 to 100 making it possible to combine the items into one index. (For a detailed discussion of this procedure see U.S. Census, 1963 or Robinson, et. al., 1969:357-358).

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*These counties had been selected for the S-44 project, a predecessor of the S-79 project, because they were either substantially or seriously low income in 1950. The segments (but not necessarily the households) within the counties, were the same ones used in the S-44 study. For a more detailed discussion of the sampling design, see "Sample Design for the Regional Rural Sociology Project, S-44," unpublished paper, Department of Statistics, North Carolina State University, Spring 1960.

**For further information on the sampling procedure, see, for example: A.L. Coleman, et al, "Rural Development and the Quality of Life in Harlan, Perry, Whitley and Wolfe counties: Summaries of Data from Surveys of Households in 1961 and 1973," mimeographed papers, Department of Sociology, University of Kentucky, December, 1973.

2) Leisure-time Activity Participation (LEISURE)

Each respondent's leisure-time participation intensity score takes into account how frequently he (she) participates in various leisure time activities, whether or not he owns his own equipment, if he subscribes to magazines dealing with his leisure time activities and if he is a member of or holds an office in a club or group devoted to his leisure time persuits. The activities included in this index are:

a. hunting and/or fishing
b. camping, boating and similar activities
c. indoor activities (e.g., T.V. viewing, reading, art and crafts)
d. outdoor activities (gardening, sight seeing, bicycling, etc.)
e. participatory activities (golf, pool, bowling, tennis, etc.)
f. spectator activities*
g. neighborhood and community activities*
h. informal social activities*
i. formal associations*

The scoring procedure for each of the above items was to assign from 0 to 4 points for various levels of participation (0 for "never", 1 for "seldom", 2 for "occassionally", 3 for "fairly often" and 4 for "very often"); 0.5 points were added if the respondent owned his own equipment, 0.5 points if he subscribed to a related magazine; in addition, a respondent received one point if he was a member and two additional points if he was an officer in an organized club or group dealing with his leisure time activity. After the total for each of the above areas (a through i) was obtained, they were summed to obtain a respondent's leisure-time participation intensity score. The theoretical range of this score is from 0 to 56.

3) Level-of-living Scale (LOL)

The level-of-living scale was developed using Guttman scaling techniques on the 28 household items included in the S-79 interview schedule. The results yielded the scale reported in Table 1. The coefficient of reproducibility for this scale is .96, while the coefficient of scalability is .79. Each respondent was assigned the appropriate scale score.

II) Subjective Family Quality of Life (SFQOL)

This index is made up of three subjective indicators of family quality of life, namely, how satisfied the household head is with his(her) residence, income, and his perception of the change in his family situation in the last ten years.* Principle component factor analysis without rotation was used to develop the index and obtain factor scores for each respondent.

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*Only frequency of participation was asked regarding this activities.

The residential item asked the respondent how satisfied he was with his present residence. Family income satisfaction was in reference to the year prior to the interview, while the perception of his family situation was in reference to the change which had occured during the past 10 years. These three items had SFQOL factor loadings of .73, .74, and .40 respectively.

III) Subjective County Quality of Life (SCQOL)

This index measures each respondent's perception of changes in three dimensions of quality of life in his county of residence in the past 10 years. Since these questions refered to the last 10 years, when using subjective county quality of life we will include in our analysis only those respondents who have lived in their county of residence for "most"of the 10 years prior to being interviewed. This reduces the number of respondents from 1630 to 1415.

The three dimensions of perceived change in quality of life consist of county economic opportunities, county government, and services in the county. The SCQOL score is the unweighted summation of a respondents score on each of these three dimensions. Each dimension is in turn the unweighted sum of several items measuring perceived change in that area of quality of life.

The three dimensions, economic opportunity, county government, and county services were obtained by factor analyzing 23 items dealing with perceived changes in the respondent's county of residence. The results of a principle component factor analysis with orthogonal rotation (excluding those items not loading heavily on any one factor) are presented in Table 2. For each of the items included in Table 2 the respondents were asked if in the last 10 years their county had improved, remained about the same, or gotten worse. Index scores for each of these dimensions were then assigned to each respondent using the unweighted sum of the items. It was these three index scores that were summed to obtain each respondent's overall SCQOL score. Unweighted summations were used throughout the SCQOL index construction procedure because the results correlated extremely high (.99 or higher) with the results obtained using weightings derived from the principal component factor analysis.

Findings

In this section the degree of congruence between objective and subjective quality of life indicators is explored using zero order correlation coefficients. Table 3 contains the correlation coefficients between the objective family quality of life index, the subjective family quality of life index and the subjective county quality of life index for the total sample as well as white, black, and Indian respondents.

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*Because this data was not available for Louisianna respondents, the number of respondents for the SFQOL variable was reduced to 1141. Pairwise deletion was used throughout our correlation procedures.

For the total sample the results in Table 3 show a positive association between two of the three quality of life indicies. That is, there are significant positive correlations between 1) the subjective and objective indices of family quality of life and 2) the subjective family quality of life index and the subjective county quality of life index. On the other hand, there is no relationship (r=.000) between the objective family quality of life index and the subjective county quality of life index. Black respondents show a similar trend in that there are significant positive relationships between OFQOL and SFQOL and between SFQOL and SCQOL, while there is no relationship (r=.005) between OFQOL and SCQOL.

White respondents show significant positive correlations between all three quality of life indices. Although the OFQOL-SCQOL correlation is statistically significant its magnitude is rather low. It is interesting to note that the magnitude patterns of the correlation matrices are the same for the total sample as well as for black and white respondents.

None of the correlation coefficients between the three quality of life indices are statistically significant for the Indian respondents. The magnitude trends of the coefficients is similar to those for the total population, black respondents and white respondents. It is interesting to note the sign reversal for the SFQOL-SCQOL correlation coefficient. Our findings for Indian household heads should be considered highly tentative since there were only 43 Indians in the S-79 sample with most (41) of them residing in one North Carolina county.

Conclusion

Given the indecisive results reported in the literature, this paper attempted to gain additional insights into the nature of the relationship between objective and subjective quality of life measures. After developing three quality of life indices (OFQOL, SFQOL, SCQOL) their degree of congruence was examined. For the total sample, as well as the black and white subgroups, our findings show: 1) a positive, although not high (.3 to .4), correlation between the objective and subjective family quality of life indices; 2) a mild (.15 to .25) positive relationship between the subjective family and subjective county quality of life indicies; and 3) with the exception of white respondents, no relationship between the objective family and subjective county quality of life indicies. The results for American Indian household heads show no statistically significant relationship between any of the three quality of life indicators. This latter finding should be considered highly tentative because, as pointed out earlier, there were only 43 Indians respondents, furthermore, 41 of these resided in one North Carolina county.

Since our results, using southern rural household respondents, indicate at best a mile positive (less.40) relationships between the objective and subjective family quality of life indicies examined; it seems inadvisable to use one index as an indicator of (or substitute for) the other. Furthermore, our findings deem it inadvisable to use either of the family quality of life indicies as an indicator of subjective county quality of life (or vice versa).

Suggestions for future research include the development of an objective county quality of life index and examining its relationships to subjective county and family as well as objective family quality of life indicies. More sophisticated quality of life scales would also make an invaluable contribution to social scientists working in this area.

Table 1

Scale Score	Item	N Scale Types	% Owning Item	Errors
10	Dishwasher	77	8	53
9	Air Conditioner	372	30	83
8	Vacuum Cleaner	470	57	87
7	Hot Water Heater	253	75	56
6	Bath or Shower	63	75	10
5	Inside Flush Toilet	57	76	5
4	Piped Water	62	83	21
3	Kitchen Sink	82	85	9
2	Gas or Electric Range	130	94	6
1	Mechanical Refrigerator	50	98	0
0	(None of the above items)	14		

N=1630

Table 2
Factor Loadings for the
Subjective County Quality of Life Indicators

	Factor loadings		
	F_1 economic (opportunities)	F_2 (goverment)	F_3 (services)
Politics and political parties	.101	.785	.041
County government	.122	.786	.107
Crime and law enforcement	.093	.586	.143
Real income	.587	.083	.060
Job opportunities	.731	.088	.049
Opportunities for the young	.608	.029	.286
Opportunities for blacks	.575	.026	.040
County as a place to live	.604	.200	.117
Public school	.104	.237	.687
Medical care and health services	.195	.012	.661
Welfare programs	.077	.086	.679
Common Variance	38.7%	32.4%	28.8%
Total Variance	18.4%	15.4%	13.7%
Eigenvalue	2.02	1.69	1.51

Table 3
Correlation Coefficients for Subjective
and Objective Quality of Life Indices

Total Sample (above the diagonal) and Blacks (below the diagonal).

	OFQOL	SFQOL	SCQOL
OFQOL	----	.385**	.000
SFQOL	.317**	----	.165**
SCQOL	-.005	.250**	----

Whites (above the diagonal) and Indians (below the diagonal).

	OFQOL	SFQOL	SCQOL
OFQOL	----	.364**	.097**
SFQOL	.281	----	.207**
SCQOL	.060	-.156	----

**Significant at the .01 level

REFERENCES

Campbell, Angus
1972 "Aspiration, Satisfaction, and Fulfullment," in A. Campbell and P. Converse, eds., The Human Meaning of Social Change. New York: Russell Sage Foundation, 441-466.

_____________, P. Converse, and W. Rodgers
1970 Monitoring the Quality of an American Life. A Proposal to the Russell Sage Foundation. Survey Research Center, University of Michigan.

Coleman, A. Lee
1975 "Quality of Life: How Community Leaders and Ordinary Residents Assess Various Aspects of Life in Four Kentucky Mountain Counties," RS-45. Departmental Bulletin, Department of Sociology, University of Kentucky, College of Agriculture, Lexington, Kentucky.

Coughenour, C.M.
1976 "Measuring the Quality of Life for Rural Families." Appalachia Vol. 9, No. 4, February-March, 1-9.

Christenson, James A.
1977 "Community Satisfaction: Objective and Subjective Indicators." Paper presented at the annual Rural Sociological Meeting, Madison, Wisconsin, August.

Dillman, Don A., and K. R. Tremblay
1977 "The Quality of Life in Rural America." The Annals of the American Academy, January:115-129.

Frese, Wolfgang
1978 (forthcoming) Perceived Changes in Quality of Life of Open County Residents in Six Mississippi Counties. Mississippi State Agricultural and Forestry Experiment Station, Mississippi State University.

Gross, Bertram M.
1969 Social Intelligence for America's Future. Boston: Allyn and Bacon.

Hobbs, Daryl
1970 "Quality of Life in the Rural Community." The Year-Book of Agriculture 1971: A Good Life for More People. Washington D.C.: USGPO.

Liu, Ben-Chen

1973 The Quality of Life in the United States. Kansas City: Midwest Research Institute.

1974 "Variations in the Quality of Life in the United States by State, 1970." Review of Social Economy xxxii, No. 2 (October): 131-147.

1975 "Quality of Life: Concept, Measures and Results." The American Journal of Economics and Sociology 34-1 (January): 1-13.

McGranahan, David, and others

1975 The Use of Leader Ratings to Assess Community Services and Characteristics in the Kickapoo Valley. University of Wisconsin-Madison: Institute for Environmental Studies.

Ringen, Stein

1976 "Social Indicators Research in Nordic Countries." Social Indicators Newsletter, March.

Robinson, John P., R. Athanasiou, and K. B. Head.

1969 Measures of Occupational Attitudes and Occupational Characteristics. Ann Arbor, Michigan: Institute for Social Research.

Rojeck, Dean G., Frank Clemente, and Gene F. Summers

1975 "Community Satisfaction: A Study of Contentment With Local Services." Rural Sociology 40 (Summer): 177-192.

Rostow, W. W.

1967 The Stages of Economic Growth. New York: Cambridge University Press.

Sheldon, Eleanor, B., and Wilbert E. Moore

1968 Indicators of Social Change. New York: Russell Sage Foundation.

Schneider, Mark

1976 "The 'Quality of Life' and Social Indicators Research." Public Administration Review, May/June 297-305.

Stagner, Ross

1972 "Perceptions, Aspirations, Frustrations, and Satisfactions: An Approach to Urban Indicators." The Annals of the American Academy of Political and Social Sciences Vol. 388:59-68.

United States Bureau of the Census

1963 Methodology and Scores of Socioeconomic Status. Working No. 15, Washington D.C.: GPO.

LIFE SATISFACTION:
A STRUCTURAL SYSTEMS PERSPECTIVE

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The incidence of research and literature in the area of life satisfaction has been particularly on the increase in the past few years. The level of sophistication of the conceptualization and methods used regarding life satisfaction has also increased. This has been sorely needed. The increases in sophistication in conceptualization, though sorely needed, may be viewed as removing the concept of life satisfaction from the realm of sociological inquiry. Instead, life satisfaction appears to be dealt with in a more psychological or social-psychological framework. The intention expressed in this paper is to fit the concept of life satisfaction into a consistent conceptual scheme which may be viewed as inherently more sociological than those presently appearing in the literature.

The leading proponents of life satisfaction research, Campbell, Converse and Rodgers (1976), attempted to locate specific satisfactions in particular satisfaction "domains." Their guiding assumption was that based upon the Lewinian model that these specific satisfactions contributed to global life satisfaction as some compound of these specific satisfactions. This may be viewed as a major breakthrough in the conceptualization of global life satisfaction. However, the matter of where these specific life satisfactions occur in social space remains quite vague. Further, Campbell, Converse and Rodgers view specific life satisfactions as evaluations (1976, 61). This is an appealing conceptualization of life satisfaction, but it remains unclear as to how these evaluations are generated. Campbell *et al.* suggest that these evaluations appear as the interaction between some internal expectation and as an assessment relative to some significant others. In essence, their view is based upon the notion that these evaluations are the product of the operation of principles of relative deprivation. This perspective intimates that life satisfaction is located in social space but gives only general clues as to where the researcher should look and how it is generated.

Related to the problem of the origin and location of life satisfaction in social space is the problem of level of abstraction of the measurement of life satisfaction. Life satisfaction, that is, global assessments of life satisfaction as it has been measured, represents a second order evaluation. Campbell *et al.* demonstrate this when they state: "Whatever global report an individual gives as to his overall sense of well-being should be some compound of his gratifications and disappointments with more specific features of life... ."(1976, 61) This statement treats the global evaluation as the same order of abstraction as the component domain evaluations. A composite of various, more concretely based evaluations would indeed, represent a first order evaluation. However, the global question; "Which number on the card comes closest to how satisfied or dissatisfied you are with your life as a whole?" (1976, 554) may be viewed as an evaluation of evaluations. Thus, this measure is removed from the first order of abstraction. This is not necessarily a detracting factor, however, it is one for which we must account. This may also contribute to the less than perfect accountability of the global measure by the more concrete measures of satisfaction, as they appear in statistical manipulations. The point of agreement, between this work and that of Campbell et al. is, life satisfaction is an evaluation which can be measured or accounted for in various concrete domains and globally.

To address the relationship of the structural systems model to life satisfaction, we must identify what life satisfaction is in terms of its parts, how these parts are related, how they operate, where they are located in social space and how this entity called life satisfaction is related to other systems or units in larger systems.

Parts of a Life Satisfaction Evaluation

Following the structural view of Bates and Harvey (1975), an evaluation is the product of the interaction between some norm and some corresponding set of information. The product or evaluation occurs within the entity termed the attitudinal subsystem. The three subsystems, normative,informational and attitudinal, taken together form what Bates and Harvey call the "system of personality."

A bit of information is an idea about how things are. Stimuli coming in through the perceptual faculties of the individual are perceived and stored in the "memory" as bits of information, as the products of behavior either by ego or by some alter actor or by the environment. Perception in this case is also considered a behavior. As the information becomes either redundant or recurrent in relation to the situation, interaction or culture, these bits of information are categorized as being of a set. A norm is formed from these sets, that is, memory allows the individual to be aware that a general rule may apply to the inprocessing of certain types of information. Norms represent rules for what information belonging to a set should look like. A norm is an idea about how things ought to be... . Norms then become the basis for attitudes and attitudes are ideas about how ego feels concerning the way things are. (Bates and Harvey, 1975, 235-262) This is to suggest that an attitude functions as an evaluation between what is (information) and what ought to be (norm). Attitudes generally take the form of an affect, a positive or negative evaluation. This configuration of components which determine behavior underlies the theoretical position that, the personality system is instrumental for human behavior, by articulating culture, interaction and situation within the individual.

Norms have three apparent functions in the Bates and Harvey model:
(1) they are the bits of culture contained within the indivdual, (2) norms or bits of culture are a component of personality and take the form of should or ought type statements for all types of behavior, i.e., overt behavior and the behavior of perception, and (3) norms are behavior in storage or latent

behavior. Thus, we can see that the operative principle of culture is housed in the personality system of an individual as norms. The same can be said of the systems of interaction and situation. The situation or interaction, both, must be processed by the information subsystems of the individual personality for the individual to complete his half of the interaction. Also, in each interaction and situation, norms and attitudes are in use to sort and evaluate incoming data. This is not to suggest that culture, situation and interaction are not necessary for behavior, but rather, it is the personality system which allows the individual to make sense of these inputs and respond accordingly.

To summarize, the informational subsystem functions as a receptacle for raw information and categorized information. Information bits are stored as individual entities for unique information, as elaborations of new categories or as new cases for categorized information. The normative subsystem contains the combining rules for information categories. The normative subsystem also operates as a storage unit for behavior in its latent form. These behaviors can be called forth on the basis of situation, cultural or interact similarity to categories stored. The attitudinal subsystem contains the evaluations in which we are interested. For every normative or behavioral response to information input, an evaluation is made as to the congruity of the information and behavior set as well as for the feedback information after the norm is activated. On the basis of this, global life satisfaction is conceptualized as the sum or compound of the evalutions for every behavior ever performed by an actor. Dealing with global life satisfaction in this undifferentiated manner makes the absolutely concrete assessment of life satisfaction methodologically problematic if used as a research guide. This problem will be readdressed below.

Location of Satisfaction in the Social System

Bates and Harvey, in The Structure of Social Systems (1975), have offered a way of conceptualizing an individual's placement in society, at the first order of abstraction. Each smaller part beginning with the act or norm is used to compose the next larger unit, eg., role, status, position, situs and station. In so doing, the conceptual task of locating behavior in social space is made more consistent.

The recent trend in life satisfaction research has been to examine specific satisfactions as they relate to "domain" satisfactions and how these domain satisfactions relate to global satisfaction (Campbell et al., 1976; Andrews & Withey, 1976; Fox, 1974). This apparently is a more accurate approach, however, no clear rules are emerging as to the placement of specific satisfactions in particular domains nor what the domains should be. Herein lies the attractiveness of the Bates and Harvey person-centered model, for it does afford allocation specifications for these types of satisfactions.

Following the person-centered approach as presented by Bates and Harvey, the system of information, norm and its product attitude or evaluation are set as clusters in units referred to as roles. A role is defined as a, "set of norms organized around a given function that one actor performs toward another actor, within a single real group, in a given temporal-spatial context" (1975, 92). Assumed here is that with each of the norms composing the role there is an informational set. Thus, when any norm and informational set is activated, an evaluation is precipitated. In other words, when a behavior, given the situation, interaction, etc., receives feedback, a satisfaction affect is produced. This may be termed role satisfaction. Status satisfaction would pertain to the satisfaction derived from all of the roles an ego actor performed toward a given alter actor or class of similar alter actors in a particular group. Position satisfaction would occur if all of the roles composing the statuses that have been activated in a particular organization or group have been met with consistent feedback to the normative expectations located in those roles. Situs satisfaction would refer to the combining of satisfactions for all of the roles of each of the positions an ego actor held in some particular organization. Station satisfaction would be similar to situs satisfaction but would be for all of the situses that an ego actor has. In other words, station satisfaction would refer to the aggregate of satisfactions that the person has for each and every linkage to society. Station satisfaction would then be more or less synonymous with global life satisfaction, however, this conceptualization is entirely at the first level of abstraction.

It should be noted that defining life satisfaction in this manner has tied the concept directly to behavior and located it in social space. This is both theoretically appealing and methodologically cumbersome. However, from this perspective we can utilize the typical data collected relating to life satisfaction and apply systems assumptions to operate as mechanisms to derive a better view of the nature of life satisfaction. The particular systems assumptions evoked are:

1. That all parts of a structure are linked to each other directly or indirectly.
2. That the linkage is such that a movement or change in one part will inevitably produce a movement or change in all other parts provided the nature of the linkage system, the amount of time for passage and the magnitude of movement or change. (Bates & Harvey, 1975, 29-30)

This is to suggest that evaluations in one role are linked directly or indirectly to the evaluations of satisfaction of all other roles performed by the same actor. The linkages are at varying distances from each other relative to where they are performed in social space. The question remains, as to how these systems'mechanisms operate relative to one's structural placement in the social system and one's evaluations of satisfaction.

Bates and Harvey provide a clue as to how this question may be approached. They state, "The greater the distance separating two roles, the greater the probability that they will be in conflict with each other." (1975, 351) As a corollary, the greater the distance between two roles, the less will be the magnitude of change in one role produced by change in another role. The importance of this corollary is that where inherent conflict is greatest, in the structural sense, the effect of one evaluation on another will be at a minimum.

An ego actor is not necessarily fully constrained by his placement in the social structure. The actor can manipulate certain aspects of the structure such as the amount of time between particular role performances. The actor can also manipulate the social distance or space between himself and the role of an alter actor. This latter point is documented in somewaat different terminology in Garfinkel's Studies in Ethnomethodology. Garfinkel asked his students, who were living at home, to behave one evening as boarders in their homes, rather than as family members (1967, 45-49). As the quote from Bates and Harvey would have us predict, the greater social distance created by the students in their role shift created greater reported conflict within the family. The point being illustrated is that social space and time between roles may be manipulated to a certain degree by the ego actor. By so doing, the individual is in a situation to manipulate how domain or situs satisfactions enter into global evaluations of life satisfaction.

One's ability to manipulate their station structure, to maximize life satisfaction, is dependent upon the size and the complexity of their station structure. Size of station simply refers to the number of positions a person holds in society. Complexity refers to the number of positonal shifts that an ego actor makes given some unit of time. These two variables may vary independently. However, as the size of one's station increases, the more likely that its complexity will increase. Also, as the size of one's station increases, the average or mean distance between positions increases, particularly between situses.

The fewer the number of positions a person has composing their station structure, the more time that individual will have to spend within those positions. If one or more of these few positions are detrimental to life satisfaction or generate negative evaluations by the ego actor, the greater will be the probability that the ego actor will express low global life satisfaction. In other words, satisfaction is based upon behavior within a small social space which is too small to manipulate.

Persons who have highly complex station structures may be thought to occupy a greater amount of social space. Since size of the station structure is relatively larger in complex stations, the amount of time spent in any particular position will tend to decrease to accommodate all of the positional shifts. Thus, to a certain degree, we may think of this individual being manipulated by his social structure.

The ego actor with some mid-range of station size may be thought to also have some mid-range of station complexity. The mid-range station size and complexity may be the most manipulatable of station structures. The ego actor has enough positions to be able to shift from one to another. Thus, due to the larger size of the station and the moderate degree of complexity, the individual can spend more time in those positions he or she finds to generate positive evaluations or positive life satisfaction. By the same token, the ego actor may be better able to avoid positions in which assured negative evaluations are likely to occur, or at least minimize the amount of time spent in them.

These statements can be presented in propositional form.

1. As the number of positions which an ego actor occupies increases, the size of the ego actor's station increases.
2. As station size increases, to some mid-range, social space will become increasingly manipulatable.
3. As station size increases beyond some mid-range, the ego actor's social space will become less manipulatable.
4. The greater an individual's manipulatable social space, the greater the individual's access to reducing the effects of dissatisfactory life situations.
5. The greater the reduction of dissatisfactory life situations the greater the individual's global life satisfaction.
6. The more manipulatable the social space which the ego actor occupies the greater the ego actor's life satisfaction.
7. Therefore, there is a curvilinear relationship between the number of positions an ego actor occupies in society and global life satisfaction.

Item number seven (7) is to suggest that persons with high and low station size should have relatively low life satisfaction scores. Persons with mid-range station size should report relatively high global life satisfaction scores.

Conclusions

It has been suggested in this paper that life satisfaction is an affective evaluation of particular behaviors that occur at particular locations in social space. These particularistic evaluations combine to form a global assessment of life satisfaction. This combination is not purely additive, however. The individual can, to some degree, manipulate the social space which he or she occupies. In other words, the individual may weight certain spheres of behavior as they enter into a global life satisfaction evaluation. Some social spaces are too small or simple to be manipulated. Other life spaces are too large to be manipulated well. Those stations which are mid-range in size afford the greatest flexibility in terms of time allotted to various positions and the ability to move from one position to another. It would appear that this latter structural type would allow for the highest probability of sustaining positive global life satisfaction assessments.

The express purpose of this paper has been to build upon the recent advances made in the area of life satisfaction and in so doing reclaim life satisfaction as an area explicable by a sociological theory which can be grounded in real behavior.

REFERENCES

Abrams, M.
1973 "Subjective Social Indicators," in Nissel (ed.) Social Trends, 4, a publication of the Government Statistical Service, London.

Andrews, F. M. and S. Withey
1976 Social Indicators of Well-Being: American's Perceptions of Life Quality. New York: Plenum Press.

Bates, F. L. and C. C. Harvey
1975 The Structure of Social Systems. New York: Gardner Press.

Campbell, A., P. E. Converse and W. L. Rodgers
1976 The Quality of American Life: Perceptions, Evaluations, and Satisfactions. New York: Russell Sage Foundation.

Clemente, F. and W. J. Sauer
1976 "Life Satisfaction in the United States", Social Forces, 54: 621-631.

Fox, K. A.
1974 Social Indicators and Social Theory: Elements of an Operational System. New York: John Wiley and Sons.

Garfinkel, H.
1967 Studies in Ethnomethodolcgy. Englewood Cliffs, N.J.: Prentice-Hall, Inc.

A LONGITUDINAL ANALYSIS OF SATISFACTION WITH SELECTED COMMUNITY SERVICES IN A NON-METROPOLITAN AREA*

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An important aspect of the overall quality of life in the United States is community satisfaction. The local community serves as a link between citizens and macro-level society, and as the setting for the majority of life cycle events for individuals (Rossi, 1972). While social scientists have accepted the premise that the nature of the community in which an individual lives affects that person's quality of life, there has been a great deal of interest in recent years in the conditions which tend to promote or retard favorable perceptions of the quality of life in a community (Campbell et al, 1976).

A central set of objective factors in community life are the services supporting the conduct of everyday life. A major source of dissatisfaction with the quality of life in non-metropolitan areas has been the absence of or poor quality of basic services. A dominant theme in the Economic Development Act of 1968, the Rural Development Act of 1972, and other legislation has been the improvement of public services in rural areas. Federal funds continue to be channeled to rural areas through block grants and loans from various federal agencies. The disproportionate population growth of rural areas in recent years suggests that many of the major sources of dissatisfaction with rural life have been alleviated, and that small town living is becoming increasingly attractive to many people (Beale, 1975).

An important question, then, is the extent and distribution of changes in the quality of rural services. Improvement may be restricted to persons residing in population centers, or to residents willing and able to undergo tax increases and higher user charges. However, limited improvements may serve only to raise expectations and increase overall dissatisfaction with essentially stable conditions.

Several regional studies have dealt solely or partially with satisfaction with community services or community assessments (Kuehn, 1977; Carruthers et al, 1975; Kuehn, 1976; Smith and Klindt, 1976; Crawford et al, 1975). A northeastern regional study of community satisfaction reported rather high levels of satisfaction generally, but wide variability in satisfaction with specific community services between geographical areas. Also, out of a wide range of possible factors that might influence the relationship between a particular service and satisfaction with that service, the northeastern researchers were unable to discover a variable that had much of an effect on satisfaction with community services (Kuehn, 1977:1; Kuehn, 1976:1-2). Few studies have charted satisfaction with community services over an extended period.

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The objective of this paper is to examine changes in satisfaction with selected community services in three non-metropolitan counties. We focus on the perceptions of three groups of community residents: government officials (leaders or knowledgeables), owners or managers of businesses, and random household respondents. The services are: water, sewage, garbage, telephone, fire protection, health care, public schools and recreation.

It is hypothesized that community group membership will be an important factor in this study, accounting for a great deal of variability in assessments of community services. In addition, several control variables are introduced into the analysis in order to reduce spurious relationships between group membership and changes in satisfaction with community services.

Research and Models in Community Satisfaction

Recent research in the area of community satisfaction tends to suffer from problems of comparability in two major ways. First, the concept of community itself is so broad and encompassing that it contains a variety of subjective and objective meanings. Research in community, residential and neighborhood satisfaction often is confounded by the absence of a clear and unambiguous referent. Secondly, conceptual meanings and measurements of satisfaction vary widely, further restricting comparison (Deseran et al, 1976).

To overcome these problems, researchers have developed models of community satisfaction that delimit analytical components of a community and incorporate specific dimensions of satisfaction for each component. One of the most well developed recent models is that utilized by Marans and Rodgers (1975) and elaborated by Campbell and associates (1976). It represents an attempt to place the different concepts of locality in some meaningful temporal and physical order. In this model, the levels of specificity in residential milieu generally move from dwelling unit to neighborhood to community, although Marans and Rodgers (1975) make a further distinction between two levels of neighborhood ("micro- and macro-"). Levels of satisfaction with these different "domains" of experience also influence and are influenced by satisfaction with other areas of life, which in turn influence the total quality of life experience (Marans and Rodgers, 1975:306; Campbell et al, 1976:220).

The work of Marans and Rodgers (1975) builds on earlier research in the area of community satisfaction which suggested that satisfaction is a multidimensional variable (Johnson and Knopp, 1970). One component of overall community satisfaction is assessment of local services and facilities. Marans and Rodgers found that "assessments of perceived environmental attributes," such as schools, taxes, etc. strongly influenced community satisfaction. This finding was also supported by Goudy (1977), although his study suggested that social dimensions are of more importance than institutional factors in explaining community satisfaction.

Personal characteristics, such as age, income or race, which might be thought to be highly correlated with levels of community satisfaction, were actually demonstrated by Marans and Rodgers (1975) and Goudy (1977) to have little direct effect on community satisfaction. Personal characteristics assume more importance, however, when they are used to explain attachment to the community rather than community evaluation (Goudy, 1977:380). Other studies which have utilized personal characteristics as correlates of satisfaction have produced findings which are inconclusive and sometimes contradictory (Rojek et al, 1975:184-185). In particular, the role of different measures of socioeconomic status as determinants of satisfaction deserves further investigation.

Community Group Membership

Different segments of a community may have differential perceptions of various community services. Government officials may have more positive evaluations than other groups because of their role in securing improvements and maintaining current levels of community services. Also, studies have shown that knowledge about public issues and policies is limited to a small minority of the population, usually the leadership sector (Oskamp, 1977:117). Business interests may be particularly concerned with services as a factor in the production process or the operation of a retail or service establishment. Household respondents may be especially sensitive to changes in community services, particularly if new taxation or user charges are involved.

Some studies have shown wide variability between attitudes of leaders and nonleaders (Nix et al, 1970; Nix and Seerley, 1973; Molnar and Purohit, 1977) in such areas as orientation to change, perceived community needs and ratings of services and facilities. However, one study (Smith and Klindt, 1976) did demonstrate similar perceptions of community needs among leaders and other residents. Our study is unique in its inclusion of business leaders as a separate group. The addition of this group was considered important because in rural communities business leaders are often community leaders as well, but unlike government officials, are not directly responsible to the general public.

Research Procedures

Sample and Data Collection

The data for this study was collected as part of a research project funded under Title V of the Rural Development Act of 1972. A three county area was selected largely because of its predominantly rural character, its proximity to other growing urban centers, and its similarities to other Alabama counties in the types of problems the area faced in promoting development.

The data for this study was obtained in interviews with residents of Clay, Cleburne, and Randolph Counties conducted in 1974 and again in 1977. Interviewers contacted a sample of business leaders, a nearly complete enumeration of elected and appointed officials at the local, state, and federal levels, and a random sample of households in the three counties. In 1977, a subsample of household residents, business respondents, and government officials was recontacted. Longitudinal data were available for 110 business leaders, 92 government officials, and 101 household residents.

Different selection procedures were used to obtain the three groups of respondents (household residents, government officials, and business leaders). For the household sample, a three percent sample of the total number of households in the three county area was utilized. A multi-stage random sampling design was employed to select respondents. Census enumeration districts were identified and areas within the districts were divided into sectors which served as the basic sampling unit. Households in each sector were systematically approached for interview until the quota of six interviews was completed for each sector. A 23% subsample was selected for reinterview in 1977.

In order to obtain the sample of business leaders in 1974, a complete list of businesses and industries was assembled for the three counties and a 30 percent sample was drawn. Only owners and/or managers of businesses were interviewed. The 1977 study represents reinterviews with a 42 percent subsample.

The government leadership sector was defined as the set of county government leaders, municipal leaders, as well as state and federal agency personnel located in the three county area. The 1974 study identified and interviewed 115 officials and in the 1977 study, 92 officials were recontacted. In this study, the term government official or knowledgeable is applied to individuals in the community who held positions with responsibility for important community resources and decision-making processes. Thus, these individuals were selected because of their status as positional leaders rather than reputational leaders. Since the term "leader" generally tends to be employed ambiguously, this study will utilize either government official or knowledgeable as alternatives to the term leader. The term "knowledgeable" has been utilized by others (Steelman and Evans, 1976) to refer to a similar grouping of public officials.

Measurement

In 1974 satisfaction with selected community services was measured by an adequacy rating; respondents were asked to assess whether a particular service was "more than adequate," "adequate," "less than adequate," or whether the service existed in their community. Respondents were asked to rate the following services: water, sewage, garbage, telephone, fire protection, health care, public schools, and recreation. These rankings were coded from one to four.

In 1977, satisfaction with the same community services was measured by a scale that ranged from "very satisfied" to "very dissatisfied," with values of from one to six. In order to deal with the discrepancy in response frameworks, the 1974 and 1977 ratings were standardized on a 100 point scale so that the values represented percentage of scale. In this way, data from the two time periods could be compared by computing a difference score between the two ratings. Any bias in this scoring procedure is a constant one, and should not affect differences between groups.

Changes in satisfaction with selected community services were compared by community group membership and then control variables were introduced in order to eliminate the effects of these variables on satisfaction levels. County was a classification variable coded as 1, 2 or 3 for each county in the study. Sex was utilized as a classificatory variable and coded as 1 or 2. Length of residence in the community was measured in terms of actual number of years spent in the area. Income was measured by 12 categories ranging from $0-1,999 to $30,000 or above. Education was measured by the actual number of years of schooling completed through college and 17 was assigned to graduate training.

Analysis

To examine changes in levels of satisfaction from 1974 to 1977, mean scores of satisfaction with each service in 1974 and 1977 are presented, along with the net change. Analysis of variance was used in order to evaluate differences in satisfaction with local services between community groups. Multiple classification analysis was employed as a method of displaying the results of analysis of variance and obtaining mean scores adjusted for a series of control variables. Length of residence, income and education were employed as covariates, and county, sex and community group were included as independent variables. The dependent variable was change in satisfaction levels with a specific community service from 1974 to 1977.

Results

In order to examine the nature and extent of change in levels of satisfaction with selected community services over time, mean scores for each individual community service from 1974 to 1977 were presented by community group membership and compared. In Table 1 these mean scores are presented, along with the mean change during this period for each of the three community groups. The net difference may vary slightly from the specific numerical value obtained by subtraction of the 1974 rating from the 1977 rating due to missing data. The magnitude of the net difference is a central concern in this analysis. A T-test of poised comparisons was employed to test the significance of these differences.

All three community groups expressed increased satisfaction in connection with the overall measure of community satisfaction. The widest difference between groups surfaced in connection with water services. While the government officials displayed a large increase in satisfaction, the business group showed a small increase and the household residents registered a small decrease in satisfaction with water services over time. Differences between groups also emerged in association with telephone services. In general, the levels of satisfaction of the business group and knowledgeables improved over time, while satisfaction levels for the household residents declined.

Attitudes toward health care and sewage demonstrated other differences by group. The business and household groups expressed less satisfaction with health care and sewage services, particularly the householders, but the ratings for the government officials tended to show improvement in these services, though not significantly.

Table 2 also presents changes in attitudes over time by community group membership. Analysis of variance was employed to assess differential levels of change in satisfaction with local services across community groups. The data reveals broad differences between groups in changes in satisfaction for five of the eight community services. In some cases, the direction of the relationship was the same for all three groups. For example, the general trend was toward a decline in satisfaction with fire protection and recreation among all residents. Also, satisfaction with garbage service improved with time for all three groups.

Table 2 reveals that the government officials generally experienced greater satisfaction with community services over time when compared to the other two groups, household residents and business owners or managers. Also, household residents were generally the most negative in their evaluations of community services over time. An exception to this generalization existed in attitudes toward public schools. While the business group showed some slight dissatisfaction over time, both the government officials and household residents felt that public schools had improved from 1974 to 1977.

In Table 3, control variables are introduced to further specify the relationship between levels of satisfaction of community groups and community services. Multiple classification analysis was employed to examine the net effect of community group membership on satisfaction with community services when other factors were held constant. The F statistics and related probabilities were derived from analysis of variance. With county, sex, length of residence, income and education held constant, statistically significant relationships were found between group membership and changes in satisfaction with six out of eight services: water, sewage, garbage, telephone, fire protection and public schools.

Community group membership was thus an important factor in explaining change in satisfaction levels even with the addition of locale and socioeconomic control variables. Adjusted levels of mean change in satisfaction with a particular community service for each community group did not differ greatly from the unadjusted mean change levels presented in Table 2. Generally the same relationships were found when control variables were introduced. However, group differences emerged in change in satisfaction with garbage and fire protection and group differences were diminished for health care and recreation with the utilization of control variables. Group membership was a factor associated with differential levels of change in satisfaction for the services of water, sewage, telephone and public schools with or without residence and socioeconomic variables held constant.

Table 4 presents the results of a regression analysis of selected community services by community groups on change in community satisfaction. This analysis shows that very little of the total variation in change in community satisfaction could be explained by change in satisfaction with selected community services among community groups. The regression coefficients show that for both the government leaders and householders, a change in satisfaction with garbage service was positively associated with a change in community satisfaction. For the business group, an inverse relationship was found between a change in community satisfaction and a change in satisfaction with both public schools and sewage. These negative associations are difficult to explain theoretically, but generally it is possible to conclude that change in satisfaction with selected community services may not be very highly related to changes in overall community satisfaction.

Discussion

Three years is a relatively short period of time for extensive improvements in rural public services. Therefore, it appears that the extent of change in satisfaction levels from 1974 to 1977 is perhaps indicative of rising expectations for higher quality and more widely available community services, especially among household respondents. From this type of analysis, it is not possible to determine whether changes in attitudes over time are due to objective changes in quality of community services to a heightened awareness of discrepancies between the quality of urban and rural community services. The longitudinal nature of the data, however, does at least provide the local decision-maker with some rationale for setting priorities in improving local service delivery systems.

One of the most significant findings of this study is the importance of community group membership to changes in satisfaction with community services. Government officials held consistently more positive views of changes over time than either business leaders or household respondents. This result may perhaps be explained by: greater awareness of improvements by leaders, the vested interests of government leaders in improving community services, and a more holistic approach to local services in contrast to a more personal approach by random household residents. The business respondents seemed to share more moderate attitudes towards change in satisfaction with community services, with the possible exception of recreational services, toward which they exhibited a high degree of dissatisfaction.

In general, regardless of community group membership, the highest level of dissatisfaction was expressed in relation to recreation. The greatest satisfaction was shown by government officials in relation to water services, but there was also a great deal of satisfaction with public schools expressed by government leaders and household residents. Looking at each community group individually, government leaders became increasingly satisfied with water services and less satisfied with recreation; business leaders became more satisfied with garbage services and more dissatisfied with recreation; and the household respondents expressed increased satisfaction toward public schools and lessened satisfaction with fire protection.

Another important finding of this study is the relative absence of a relationship between change in satisfaction with selected community services and change in overall community satisfaction. This may be due to the fact that this study compares changes in satisfaction, rather than the more traditional approach of comparing satisfaction levels at one point in time. It may also be attributed to the overall measure of community satisfaction which perhaps did not discriminate well or reflect sufficient variation in attitudes.

One possible implication of this analysis is that the most basic public services, such as water systems or telephone service, are among the first rural community services to receive public attention and outside funding. Thus, it is more likely that improvements will occur first in these primary physical services than in human services which may be assigned lower priority, such as recreation. Also, there may be a greater chance of local citizen action in regard to narrowly based local utility projects than there might be in relation to recreation, for example, where the power to set priorities more likely lies at the state or federal level.

This analysis provides little support for the proposition that part of the renewed appeal of rural areas lies in their increased capacity to meet some of the basic community needs essential to group living. While some important community services were not included in this study, a look at satisfaction levels over time between different community groups provides some insight into the different ways in which community services are perceived and the ways in which services affect different segments of a community. Future research may examine the relationship between incremental improvements in community services, the distribution of such improvements, and changes in satisfaction among those receiving the services.

References

Beale, Calvin L.
1975 "The revival of population growth in nonmetropolitan America." USDA Economic Research Service, ERS-605.

Campbell, Angus, Philip E. Converse and Willard L. Rodgers
1976 The Quality of American Life. New York: Russell Sage Foundation.

Carruthers, Carrey E., Eugene C. Erickson and Kathryn N. Renner
1975 Delivery of Rural Community Services: Some Implications and Problems. Las Cruces: New Mexico State University, Bulletin 635.

Crawford, Charles O., Nelson L. LeRay, Samuel M. Leadley and Edward Knapp
1975 Methodological Considerations in Researching Community Services in the Northeast. New Brunswick: New Jersey Agricultural Experiment Station, Bulletin 836.

Deseran, Forrest A., Gary M. Stokley and Virginia P. Steelman
1976 "Community satisfaction as definition of the situation: some conceptual issues." Paper presented at the Rural Sociological Society Annual Meetings.

Goudy, Willis J.
1977 "Evaluations of local attributes and community satisfaction in small towns." Rural Sociology 42:371-382.

Kuehn, John P.
1977 Satisfaction with Community Services in the Northeast. Amherst: University of Massachusetts at Amherst, Bulletin 647.
1976 Satisfaction with Community Services in Northern West Virginia. Morgantown: West Virginia University, Bulletin 649.

Johnson, Ronald L. and Edward Knopp
1970 "Rural-urban differentials in community satisfaction." Rural Sociology 35:544-548.

Marans, Robert W. and Willard Rodgers
1975 "Toward an understanding of community satisfaction." Pp. 299-352 in A. H. Hawley and V. P. Rock (eds.), Metropolitan American in Contemporary Perspective. New York: Russell Sage Foundation.

Molnar, Joseph J. and Sally R. Purohit
1977 "Citizen participation in rural community development: community group perspectives." Paper presented at the annual meeting of the Association of Voluntary Action Scholars.

Nix, Harold L. and Norma R. Seerley
1973 "Comparative views and actions of community leaders and nonleaders." Rural Sociology 38:427-438.

Nix, Harold L., Ram N. Singh and Paula L. Cheatham
1974 "View of leader respondents compared with random respondents views." Journal of Community Development Society 5:81-91.

Oskamp, Stuart
1977 Attitudes and Opinions. Englewood Cliffs: Prentice-Hall.

Rojek, Dean G., Frank Clemente and Gene F. Summers
1975 "Community satisfaction: a study of contentment with local services." Rural Sociology 40:177-192.

Rossi, Peter H.
1972 "Community social indicators." Pp. 87-126 in Angus Campbell and Philip E. Converse (eds.), The Human Meaning of Social Change. New York: Russell Sage Foundation.

Smith, George F. and Thomas H. Klindt
1976 The People in Tennessee's Title V Counties: A Summary Report on Characteristics and Attitudes. Knoxville: The University of Tennessee Agricultural Experiment Station, Bulletin 558.

Steelman, Virginia P. and Dennis Evans
1976 "Operationization of quality of life indicators by county knowledgeabies." Paper presented at the Rural Sociology Section of the Southern Association of Agricultural Scientists.

Table 1. Changes in Satisfaction with Selected Community Services 1974-1977 for Government Officials, Business, and Household Groups: Paired Comparison T-Test Between Ratings

	Mean Satisfaction								
	Government Officials (N=92)			Business (N=110)			Household (N=100)		
Service	74 rating	77 rating	Difference	74 rating	77 rating	Difference	74 rating	77 rating	Difference
Water	56.52	74.46	17.93***	50.69	53.21	2.52	38.50	34.50	-4.00**
Sewage	45.11	50.91	5.80*	45.37	41.82	-3.55	34.25	29.67	-4.58**
Garbage	68.75	73.73	4.98*	65.19	70.25	5.06*	65.81	64.18	1.63
Telephone	65.38	70.15	4.76	61.93	66.67	4.74**	65.79	61.05	-4.74*
Fire Protection	60.44	58.24	-2.20	56.13	49.21	-6.92**	49.73	41.13	-8.60***
Health Care	65.66	70.15	4.49	59.07	58.44	-.74	59.27	55.43	-3.84
Public Schools	62.08	69.10	7.02**	63.14	61.86	-1.29	58.11	64.86	6.76**
Recreation	57.02	49.25	-7.77**	50.71	36.51	-14.21***	36.58	29.82	-6.75***
Community Satisfaction	75.82	82.60	6.79*	68.64	78.31	9.67***	65.00	85.43	20.43***

*p < .05
**p < .01
***p < .001

Table 2. Mean Change in Satisfaction by Community Group Membership

	Mean Change in Satisfaction				
Service	Officials	Business	Household	F-value	Probability
Water	17.94	2.53	-3.88	21.56	.000
	(92)	(109)	(101)		
Sewage	5.79	-3.55	-4.46	6.64	.002
	(92)	(108)	(101)		
Garbage	4.98	5.06	1.7	.58	.559
	(92)	(107)	(98)		
Telephone	4.76	4.74	-4.6	6.68	.001
	(91)	(109)	(96)		
Fire Protection	-2.2	-6.92	-8.42	1.80	.167
	(91)	(106)	(95)		
Health Care	4.49	-.73	-3.42	2.91	.056
	(91)	(102)	(90)		
Public Schools	7.03	-1.28	6.76	4.31	.014
	(89)	(97)	(74)		
Recreation	-7.78	-14.21	-6.43	3.48	.032
	(89)	(105)	(96)		

Table 3. Mean change in satisfaction with selected community services by community group adjusted for county, sex, length of residence, income and education.

Service	Community Group			F-Value	Probability
	Officials	Business	Household		
Water	16.84	2.06	-2.59	5.32	.000
	(92)	(108)	(99)		
County				.51	.602
Sex				.01	.927
Length of residence				.53	.469
Income				5.67	.018
Education				3.18	.076
Combined Effect				3.07	.000
Sewage	6.11	-3.83	-4.31	2.72	.020
	(92)	(107)	(99)		
County				2.49	.085
Sex				.002	.965
Length of residence				.000	.995
Income				.30	.584
Education				2.63	.106
Combined Effect				1.91	.[illegible]12
Garbage	4.29	6.82	.42	5.72	.000
	(92)	(106)	(96)		
County				12.15	.000
Sex				.11	.745
Length of residence				1.13	.288
Income				5.36	.021
Education				2.11	.147
Combined Effect				2.97	.000
Telephone	4.06	5.14	-4.07	3.37	.006
	(91)	(108)	(94)		
County				3.38	.022
Sex				.002	.963
Length of residence				.02	.878
Income				.53	.469
Education				.99	.320
Combined Effect				1.62	.043

Table 3. (Continued)

Service	Community Group			F-Value	Probability
	Officials	Business	Household		
Fire Protection	-3.99	-6.42	-6.22	2.69	.022
	(91)	(105)	(93)		
County				4.41	.013
Sex				2.11	.147
Length of residence				.19	.663
Income				.03	.860
Education				1.65	.200
Combined Effect				1.24	.220
Health Care	2.11	-.19	-1.58	1.72	.131
	(91)	(102)	(88)		
County				3.48	.032
Sex				.03	.868
Length of residence				1.94	.165
Income				1.11	.294
Education				1.34	.248
Combined Effect				1.50	.080
Public Schools	7.48	-1.9	7.07	4.09	.001
	(89)	(97)	(72)		
County				5.99	.003
Sex				.09	.767
Length of residence				.01	.908
Income				1.12	.291
Education				1.85	.175
Combined Effect				1.79	.022
Recreation	-7.27	-13.96	-7.26	2.15	.060
	(89)	(104)	(94)		
County				.92	.400
Sex				2.60	.108
Length of residence				.03	.863
Income				1.86	.174
Education				.95	.330
Combined Effect				1.24	.223

Table 4. Regression of Selected Community Services by Community Group on Change in Community Satisfaction

	Change in Community Satisfaction					
	Gov't Officials (N=92)		Business (N=110)		Household (N=101)	
Service	B	b/S.E.	B	b/S.E.	B	b/S.E.
Water	-.116	-.989/.121	.086	.915/.116	-.100	-.150/.216
Sewage	.053	.526/.137	-.229*	-.283/.136	.011	.150/.202
Garbage	.250*	.306/.149	-.137	-.145/.115	.294*	.258/.122
Telephone	-.072	-.769/.131	-.005	-.727/.167	.081	.997/.195
Fire Protection	-.073	-.761/.125	.109	.129/.134	.097	.909/.129
Health Care	-.051	-.531/.133	-.008	-.133/.149	-.008	-.896/.156
Public Schools	.123	.135/.137	-.309**	-.403/.144	-.036	-.460/.182
Recreation	.077	.741/.119	.135	.164/.131	.201	.289/.192
R^2	.053		.170		.161	
F-Value	.532		2.02		1.22	
Probability	NS		NS		NS	

*p < .05

**p < .01

Section G

OCCUPATIONAL CHOICE

"What Are Some Basic Interests and Occupational Interest Similarities of High School Students Who Have Expressed an Interest in Natural Resource Careers?" D. L. Groves, State University College at Brockport; and V. B. Cauley, Jr., and R. K. Roberts, Virginia Polytechnic Institute and State University.

"Recruitment to Teaching: Career Expectations of South Carolina Young People." Thomas A. Lyson, Clemson University.

"Occupational Choice Among College Agricultural Students and the Commitment to a Career in Agriculture." Carol D. Payne and John E. Dunkelberger, Auburn Univeristy.

WHAT ARE SOME BASIC INTERESTS AND OCCUPATIONAL INTEREST SIMILARITIES OF HIGH SCHOOL STUDENTS WHO HAVE EXPRESSED AN INTEREST IN NATURAL RESOURCE CAREERS?[1]

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INTRODUCTION

Career education is becoming an important element within the curricula (10). Classroom teachers are raising questions about how to incorporate the career concept into their content. The traditional career materials provided to teachers is a content based approach with information about career alternatives, job requirements and makes students aware of occupational realities. It strives to add relevance to the school curricula to better prepare high school graduates for choosing a career (5). In a rapidly changing society, processes related to how to go about making career decisions is also an important element. As our society becomes more specialized, more people are finding their work less meaningful. Process is the ability of the individual to recognize his strengths, and how to apply them through the employment situation, to achieve his goals. There is a need for individuals to understand how their work is important and to perform their work in a way that is satisfying so that time on the job is productive for both the individual and the organization that employs him. Through proper career orientation, individuals and jobs can be matched and individuals better prepared to perform their work after high school or post-secondary education (8, 9, 11). Process is a common element that has transferability from one content area to another. The process approach is an element often missing from career materials. Research is needed on the underlying dimension of the decision process and how these decisions are related to a particular content.

Although there has been much discussion in the development of a rationale for career education programs, there has been little empirical testing to discover the basic dimensions of interest and occupational interest similarities, especially among groups of youth that have expressed similar interests in some content area (14). Natural resource careers were chosen as the example content area for study. This study was undertaken to isolate some dimensions that are associated with a group of high school students expressing an interest in natural resources as a potential career. These dimensions could be the building blocks in the development of career programs for high school students.

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[1] We would like to express our appreciation for the help that we received from the faculty at VPI and SU and other contributors from government and industry.

METHODS AND PROCEDURES

The Division of Forestry and Wildlife Resources and the Extension Division at Virginia Polytechnic Institute and State University have for the past several years conducted a career program in the renewable natural resources. The program presented an excellent opportunity for exploring the basic interests and occupational interest similarities of a high school group expressing preferences for natural resource occupations.

There were 54 participants representing 15 states from Alaska, the Eastern seaboard, and the Midwest. Funds for this institute were obtained through tuition charges to the participants. Financial assistance for 14 full-time equivalent scholarships was provided by industry. This assistance allowed 13 students to attend on full- or part-time acholarships. The university and other participating agencies provided the necessary staff time and facilities for the program. All applicants were screened and participant selection was based on academic merit and career interest. Scholarship awards were based upon financial need and academic ability.

The instrument used to measure basic interest and occupational interest similarities was the Strong Vocational Interest Blank (4, 6, 7). This particular instrument was selected because it has a high degree of predictive validity and also because it provides groupings based upon interests and occupational similarities. This allows for building of profiles (1). The vocational interest test was given prior to the instructional program.

The analysis was based on a male-female dichotomy, since the Strong Vocational Interest Blank measures basic interests and occupational interest similarities of either successful men or women in a wide range of occupations. It should be noted that there were only 13 females in the program, so results of this relatively small sample and subsequent generalizations must be interpreted cautiously (12, 13). Factor analysis was the primary statistical technique used to isolate the basic interests and occupational interest similarities. The principal component and Varimax methodologies were used because they allow the removal of those dimensions that are not highly interrelated. The matrix selected clarified the variable structure of common groupings based upon similar occupational skills. The scores recorded were standard scores. The interpretation of this study's results was based upon mean standard scores for each particular dimension. These results were related to interpretations from the 1969 Manual Supplement (3).

RESULTS

The following results have been interpreted and catagorized by utilizing descriptions based on factor loadings of 0.4 or greater and also utilizing the consistent patterns among other variables. Factors that loaded significantly on more than one variable were deleted from the analysis.

When the women's basic interest scales were analyzed, it was found that they fell into five factor groupings (Table 1). Factor 1 was composed of teaching, homemaking, religious activities, art, performing arts, and writing, all directly related to factor 1. A common element in this factor is a dimension related to creativity and service to others. Factor 2 was composed of numbers, physical science, and mechanical variables, all directly related to factor 2. A common element in this factor is a physical science orientation encompassing both abstract and applied skills. The third factor was composed of a law-politics dimension, which was inversely related. An underlying component of this dimension is individual as opposed to social concern. The forth factor was composed of a sports orientation, which was directly related. The underlying element of this relates to a social-recreational orientation. The fifth factor was directly related to music. This factor appears to contain a creative scientific dimension.

Analysis of the men's basic interest scales also yielded five dimensions of interest (Table 2). Factor 1 was composed of business management, sales, merchandising, and technical supervision, all directly related to factor 1. The common element in this factor suggusts an administrative-managerial orientation. Factor 2 was composed of law-politics, military activities, and adventure, all inversely related. A private versus public orientation appears to be the common descriptor. The third factor was directly related to an orientation that deals with a tangible outcome (i. e., immediate feedback). The fourth factor was composed of teaching, music, and art, all inversely related. These elements suggest an orientation away from aesthetic-creative activities. The fifth factor was related to recreational leadership and religious activities, both inversely related. The underlying dimension suggested by these variables is an orientation away from the aesthetic-social.

Examination of the women's occupational scales led to seven groupings (Table 3). The occupations of music teacher, entertainer, art teacher, and interior decorator were directly related to factor 1. The occupations of computer programmer, army enlisted person, physical education teacher, radiologic technologist, and instrument assembler were inversely related. These variables suggest a dimension that is related to an innovative orientation versus a task orientation. The occupations that were directly related to factor 2 were business education teacher and secretary. The occupations that were inversely related were psychologist, translator, physician, chemist, and mathematician. These occupations suggest an orientation away from an analytical toward a more practical orientation. The occupations of factor 3 were all inversely related. They are: dietician, home-economics teacher, licensed practical nurse, and executive house keeper. These elements suggest an orientation away from applied, non-academic pursuits. Social science teacher was the occupation directly related to factor 4. The occupation of beautician was inversely related. This suggests an orientation away from an applied social service. Math-science teacher was the variable inversely related to the fifth factor. This suggests an orientation away from a creative theoretical dimension. Bankwoman was the occupation directly related to the sixth factor. This suggests an orientation toward structural, regimented activities. There were no occupations consistantly related to the seventh factor.

Analysis of the men's occupation scales produced eight factor groupings (Table 4). The occupations that were directly related to factor 1 were: dentist, architect, mathematician, physicist, chemist, engineer, and artist. The occupations that were inversely related were: YMCA staff member, Chamber of Commerce executive, business education teacher, and community recreation administrator. This suggests an orientation toward professional science as opposed to administration. The second occupational factor was directly related to librarian and inversely related to veterinarian and policemen. The underlying orientations suggested by this dimension are related to analytic-aesthetic qualities rather than applied technical skills. The third factor was directly related to the occupations of life insurance salesman, advertising man, lawyer, and president of manufacturing concern. This factor was inversely related to the occupation of math-science teacher. These occupations suggest a persuasive-manipulative orientation. The fourth factor was directly related to senior CPA and accountant occupations. This suggests an applied business skill orientation. The fifth factor was directly related to psychiatrist and psychologist, and was inversely related to printer and banker. The underlying orientations of this factor suggest an analytical-personal as opposed to applied-patterned characteristics. The sixth factor was inversely related to the occupation of army officer and suggests an orientation away from ordered activities. The seventh factor was inversely related to pharmacist. This suggests an orientation away from small business activities. The eighth factor was directly related to the occupation of school superintendent. This suggests an orientation toward administration.

IMPLICATIONS

Results from this case study have characterized some basic interest and occupational interest similarities of a group of individuals who have expressed interest in natural resource occupations. Not all the dimensions isolated were exhibited by all individuals in the sample.

Some of the stronger characteristics of womens' basic interest in this study were creative-service and physical science dimensions. Futhermore, this sample seemed to have interest similarities in occupations characterized as innovative and moving away from the analytical toward more practical characteristics.

Some of the stronger characteristics of mens' basic interest in this case study were administrative-managerial and a practical rather than a creative-aesthetic orientation. Also, this sample seemed to have interest similarities in occupations characterized as professional-scientific, persuasive -manipulative and analytical-personal as opposed to an applied-patterned orientation.

This type of information can be used by career educators to determine the type of students that the field is attracting and what dimensions are important in the career decision. It can also help educators know what elements to emphasize in the career programs, that is, what natural resource occupations to recommend to a group based upon their underlying characteristics. Such normative information can also be used by educators to isolate a particular dimension, when an individual's score pattern is compared to the group's patterns. Underlying elements can be mixed and matched with natural resource occupations. For example, if an individual's score pattern is similar to basic interest such as administrative-managerial and practical and occupational interests such as professional-scientific and persuasive-manipulative, it should be recommended that a student explore a career in the industrial aspects of forest management.

A population that has expressed an interest in natural resource occupations has been characterized in terms of their underlying dimensions. These profiles could be helpful in identifying relevant information for career education professionals who could then determine approaches for helping individuals make more thoughtful career decisions. This approach could be helpful in all career programs because, after different groups are characterized in terms of their underlying factors, comparisons and contrasts can be made between homogeneous groupings to isolate common processes (1, 2). The resulting profiles can be used to establish the underpinnings of a total career program. Another facet of research that must be explored is an evaluation of a career program in a longitudinal manner to relate expressed interests to actual occupational decisions and satisfaction with occupations.

These results are not conclusive, especially for the female population, but they do indicate trends and have implications for future research with regard to the development of natural resource career programs in secondary schools.

References

1. Bartlett, W.E., "Psychological Need Profiles of Manpower Trainees," *The Vocational Guidance Quarterly*, 1970, Vol. 19, pp. 5-11.

2. Beit-Hallahmi, B., "Counseling With the SVIB: The 'Ideal Self'" *The Personnel and Guidance Journal*, 1973, Vol. 52, pp. 256-261.

3. Campbell, D.P., *Strong Vocational Interest Bianks Manual*, Stanford University Press, Sanford, California.

4. Campbell, D.P., "Uncertainties...," *The Personnel and Guidance Journal*, 1970, Vol. 49, pp. 50-52.

5. Feldman, M.J., "Resistance to Change," *Training and Development Journal*, 1973, Vol. 27, pp. 42 43.

6. Frank, A.C. and B.A. Kirk, "Uncertainties About the New Strong Interest Blanks," *The Personnel and Guidance Journal*, 1970, Vol. 49, pp. 41-55.

7. Frank, A.C. and B.A. Kirk, "Forestry Students Today," *The Vocational Guidance Quarterly*, 1970, Vol. 19, pp. 119-126.

8. Fraser, C.R.P., "Career Education in the U.S.," *Canadian Vocational Journal*, 1973, Vol. 9, pp. 8-11.

9. Lewis, M.D., J.A. Lewis, and E.P. Dworkin, "Counseling and the Social Revolution," *The Personnel and Guidance Journal*, 1971, Vol. 49, pp. 740-745.

10. Marland, S.P. Jr., "Career Education Now," *The Vocational Guidance Quarterly*, 1972, Vol. 20, pp. 188-193.

11. McMahon, G.G., "Education for the Realities of Life," *American Vocational Journal*, 1973, Vol. 48, pp. 25-26.

12. Nunnally, J.C., *Psychometric Theory*, New York: McGraw Hill, 1967, pp. 361-364, 544-557.

13. Phidler, F.E., "A Comparison of the Therapeutic Relationships in Psychoanalytic, Non-directive, and Adlerian Therapy," *Journal Counseling Psychology*, 1950, Vol. 14, pp. 436-445.

14. Pilenzo, R.C., "Placement of Objectives," *Personnel Journal*, 1973, Vol. 52, pp. 804-811.

Table 1. Varimax Rotated Matrix of the Strong Vocational Interest Scales for Women*

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	h^2	$\bar{x}$
Public Speaking	0.57	-0.40	-0.62	-0.11	0.04	0.89	47
Law/Politics	0.20	-0.07	-0.96	0.00	-0.12	0.98	44
Merchandising	0.64	0.23	-0.52	0.04	-0.27	0.81	41
Office Practices	0.15	0.30	-0.76	0.52	0.13	0.97	42
Numbers	0.16	0.85	-0.27	0.22	0.14	0.88	48
Physical Science	0.01	0.89	0.12	-0.15	-0.25	0.89	56
Mechanical	-0.18	0.84	-0.04	0.02	-0.10	0.75	52
Outdoors	0.60	0.46	-0.09	-0.44	0.12	0.78	61
Biological Science	-0.01	0.81	0.09	-0.01	0.54	0.95	55
Medical Science	0.06	0.87	0.10	0.03	0.46	0.99	57
Teaching	0.88	0.13	-0.13	0.07	0.08	0.82	47
Social Science	0.76	-0.23	-0.22	0.45	-0.02	0.88	50
Sports	0.28	0.11	-0.10	0.83	-0.16	0.82	57
Home Making	0.91	0.11	0.04	0.16	-0.04	0.87	46
Religious Activities	0.54	-0.15	0.05	0.30	0.34	0.52	47
Music	0.39	0.20	0.07	-0.27	0.76	0.85	51
Art	0.86	0.10	-0.22	-0.11	0.29	0.90	52
Performing Arts	0.87	-0.18	-0.17	0.11	0.22	0.87	49
Writing	0.89	-0.10	-0.33	0.10	0.05	0.92	47
Variance	6.2	4.4	2.5	1.7	1.6		
Percent	37.9	26.6	15.6	10.2	9.7		

*Values used in determining variables for profile building have been underlined for clarity.

Table 2. Varimax Rotated Matrix and Means of the Strong Vocational Interest Scales for Men

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	h^2	$\bar{x}$
Public Speaking	0.31	-0.52	-0.06	-0.35	-0.48	0.73	46
Law/Politics	0.25	-0.75	-0.11	-0.28	-0.24	0.78	47
Business Management	0.85	-0.31	0.01	-0.17	-0.11	0.87	41
Sales	0.81	-0.22	-0.01	0.04	-0.23	0.76	46
Merchandising	0.87	-0.12	0.02	-0.26	-0.26	0.91	42
Office Practices	0.73	0.01	-0.03	-0.48	0.10	0.77	45
Military Activities	0.08	-0.57	0.23	0.25	0.27	0.52	48
Technical Supervision	0.76	-0.24	0.23	0.06	-0.11	0.71	41
Mathematics	-0.12	-0.31	0.40	-0.40	-0.20	0.47	46
Science	0.12	-0.61	0.20	-0.50	-0.10	0.68	52
Mechanical	0.27	-0.25	0.69	-0.11	-0.29	0.71	47
Nature	0.15	-0.07	0.70	-0.52	0.13	0.81	55
Agriculture	-0.07	0.04	0.88	-0.08	0.03	0.79	59
Adventure	0.29	-0.67	0.08	0.25	-0.03	0.61	57
Recreational Leadership	0.26	-0.10	0.34	0.21	-0.77	0.83	51
Medical Service	0.36	-0.55	0.09	-0.34	-0.16	0.59	49
Social Service	0.13	-0.22	0.11	-0.51	-0.60	0.69	50
Religious Activities	0.15	0.04	-0.13	-0.28	-0.69	0.59	50
Teaching	0.37	-0.25	0.14	-0.67	-0.19	0.71	47
Music	0.08	0.01	0.03	-0.86	0.05	0.75	47
Art	0.13	0.11	0.26	-0.79	-0.16	0.76	48
Writing	0.08	-0.12	0.11	-0.74	-0.44	0.77	46
Variance	4.1	2.8	2.3	4.2	2.4		
Percent	25.6	17.9	14.8	26.7	15.0		

Table 3. Varimax Rotated Matrix and Means of the Strong Vocational Occupational Scales for Women

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	h^2	$\bar{x}$
Music Teacher	0.79	0.14	-0.17	0.22	-0.08	-0.34	-0.11	0.85	11
Entertainer	0.75	0.31	0.25	0.06	-0.25	-0.33	-0.17	0.93	28
Musician Performer	0.73	-0.18	0.00	0.08	-0.08	-0.37	-0.43	0.90	28
Model	0.09	0.61	0.65	-0.32	-0.19	-0.03	0.04	0.96	25
Art Teacher	0.86	-0.21	0.01	0.23	0.07	-0.12	0.24	0.92	26
Artist	0.29	-0.67	0.57	-0.23	-0.09	-0.26	-0.10	0.98	34
Interior Decorator	0.82	-0.36	0.31	0.05	-0.11	0.04	-0.03	0.92	14
Newswoman	0.74	-0.21	0.60	-0.08	-0.06	0.07	0.08	0.98	27
English Teacher	0.86	0.41	-0.09	0.21	-0.05	0.10	-0.02	0.97	20
Language Teacher	0.83	0.44	-0.08	0.14	-0.19	0.01	-0.03	0.95	21
YMCA Staff Member	0.48	0.29	-0.07	0.76	0.02	-0.14	-0.19	0.96	29
Recreation Leader	0.37	0.50	-0.61	0.43	0.11	-0.02	-0.05	0.96	30
Dir., Chirstian Ed.	0.75	0.24	-0.44	0.09	0.24	-0.19	-0.22	0.96	13
Nun-Teacher	0.58	-0.55	-0.41	0.08	-0.27	0.10	-0.16	0.92	17
Guidance Counselor	0.29	0.20	-0.59	0.67	0.09	0.18	0.15	0.98	16
Social Science Teacher	0.33	0.34	-0.26	0.80	-0.14	0.11	-0.04	0.96	20
Social Worker	0.20	-0.51	-0.08	0.76	-0.04	-0.03	-0.25	0.95	11
Speech Pathologist	0.42	-0.54	0.36	0.31	0.06	0.34	-0.02	0.82	24
Psychologist	0.08	-0.90	0.02	0.27	-0.14	0.06	0.15	0.94	25
Librarian	0.66	-0.50	0.00	0.31	0.15	0.25	0.10	0.90	26
Translator	0.22	-0.87	0.25	0.13	-0.22	0.01	-0.11	0.95	32
Physician	-0.23	-0.96	-0.15	-0.05	-0.03	0.02	0.08	0.99	43
Dentist	-0.46	-0.87	-0.06	0.05	0.06	0.12	0.02	0.98	35
Medical Technologist	-0.38	-0.68	-0.37	-0.11	-0.16	0.06	0.06	0.98	40
Chemist	-0.26	-0.95	-0.11	0.02	-0.05	0.10	0.00	0.99	26
Mathematician	-0.20	-0.93	0.22	-0.20	-0.02	0.06	-0.03	0.99	29
Computer Programmer	-0.77	-0.33	-0.37	-0.19	-0.12	0.15	0.21	0.95	35
Math-Science Teacher	0.22	-0.14	0.18	0.02	-0.92	-0.18	-0.09	0.98	54
Engineer	-0.46	-0.74	-0.22	-0.02	-0.05	0.41	0.01	0.97	30
Army-enlisted	-0.74	-0.17	0.29	0.02	0.39	0.39	-0.16	0.99	34
Navy-enlisted	-0.78	-0.09	0.45	-0.01	0.25	0.12	-0.29	0.98	43
Army-officer	-0.24	-0.02	0.16	0.69	0.44	0.44	0.19	0.98	27
Navy-officer	-0.30	-0.36	0.71	0.12	-0.01	0.15	-0.00	0.92	38
Lawyer	0.03	-0.41	0.60	0.43	0.15	0.30	0.11	0.99	21
Accountant	-0.29	-0.46	0.24	-0.09	0.02	0.73	0.11	0.91	19
Bankwoman	-0.26	0.38	-0.13	0.17	0.29	0.72	-0.19	0.90	16
Life Ins. Underwriter	0.32	0.37	0.57	0.48	-0.04	0.12	0.07	0.81	14
Buyer	-0.17	-0.70	0.18	0.26	0.01	0.45	-0.07	0.83	11
Business Ed. Teacher	-0.18	0.77	0.12	0.27	0.34	0.21	-0.04	0.88	10
Home Econ. Teacher	0.26	0.24	-0.79	0.03	-0.07	-0.38	0.20	0.93	16
Dietician	-0.08	-0.22	-0.87	0.05	-0.13	-0.22	0.18	0.91	27
Physical Ed. Teacher	-0.93	0.08	-0.27	-0.11	-0.00	-0.04	0.00	0.95	41
Occupational Therapist	0.01	-0.25	-0.83	0.42	0.00	-0.10	-0.03	0.94	38
Physical Therapist	-0.49	-0.51	-0.68	-0.09	-0.12	0.03	-0.05	0.98	47
Public Health Nurse	0.17	-0.13	-0.55	0.24	-0.39	-0.04	-0.61	0.93	29
Registered Nurse	-0.28	0.05	-0.76	0.22	-0.50	-0.08	-0.02	0.97	32
Lic. Practical Nurse	-0.14	-0.16	-0.92	-0.18	0.08	0.04	-0.21	0.97	24
Radiologic Technologist	-0.75	-0.29	-0.38	-0.22	-0.29	0.13	-0.12	0.96	43
Dental Assistant	-0.56	0.07	-0.73	-0.21	0.05	-0.00	-0.06	0.90	26
Executive Housekeeper	-0.02	0.27	-0.85	0.08	0.31	0.26	-0.14	0.99	17
Elementary Teacher	0.45	0.37	-0.78	0.08	0.01	0.07	0.05	0.96	25
Secretary	-0.26	0.94	-0.06	0.06	-0.14	0.11	0.02	0.98	20
Saleswoman	0.06	0.64	-0.69	-0.03	0.04	0.20	-0.03	0.93	11
Telephone Operator	-0.30	0.75	-0.41	-0.04	-0.37	0.17	-0.04	0.99	18
Instrument Assembler	-0.90	0.19	0.27	-0.20	0.07	0.04	-0.06	0.96	27
Swing Machine Operator	-0.32	0.31	-0.01	-0.56	-0.10	0.21	-0.56	0.88	15
Beautician	-0.35	0.31	-0.04	-0.82	0.16	0.00	-0.10	0.93	27
Airline Stewardess	-0.03	0.64	-0.49	0.32	-0.27	0.03	0.38	0.97	22
Variance	14.3	14.5	12.0	5.8	2.9	3.4	1.8		
Percent	26.1	26.5	21.9	10.7	5.2	6.2	3.4		

Table 4. Varimax Rotated Matrix and Means of the Strong Vocational Occupational Scales for Men

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	h^2	$\bar{x}$
Dentist	0.76	-0.29	0.04	-0.38	-0.12	0.05	-0.17	-0.12	0.87	37
Osteopath	0.27	-0.43	-0.33	-0.24	0.61	-0.07	-0.06	0.02	0.81	32
Veterinarian	0.24	-0.67	0.17	-0.37	-0.31	0.13	-0.28	0.00	0.87	37
Physician	0.46	-0.29	-0.07	-0.25	0.67	0.01	-0.11	0.09	0.83	36
Psychiatrist	-0.15	0.10	-0.23	-0.03	0.90	-0.04	-0.04	0.08	0.90	20
Psychologist	0.15	0.40	-0.08	-0.06	0.81	0.00	0.07	0.04	0.86	25
Biologist	0.52	0.13	-0.20	-0.13	0.76	0.10	0.03	0.08	0.94	35
Architect	0.83	0.07	0.28	-0.28	-0.19	0.04	0.22	0.06	0.94	34
Mathematician	0.81	0.27	0.21	0.06	0.19	0.20	0.19	0.11	0.91	25
Physicist	0.95	0.05	0.13	-0.02	0.12	-0.07	0.00	-0.04	0.94	26
Chemist	0.79	0.01	-0.32	0.03	0.22	-0.38	-0.16	-0.04	0.94	32
Engineer	0.88	-0.22	0.09	0.15	-0.12	-0.27	-0.05	0.04	0.95	33
Production	0.13	-0.39	0.01	0.19	-0.44	-0.54	-0.24	0.18	0.77	29
Army Officer	-0.25	-0.33	-0.39	0.29	-0.06	-0.70	0.09	-0.05	0.92	21
Air Force Officer	-0.26	-0.29	-0.41	0.14	0.11	-0.77	0.03	-0.05	0.95	27
Carpenter	0.50	-0.30	-0.19	-0.39	-0.60	-0.10	0.11	0.10	0.92	33
Forest Service Man	0.02	-0.84	-0.45	-0.08	-0.13	0.05	-0.03	-0.05	0.93	35
Farmer	0.55	-0.39	0.08	-0.17	-0.62	0.07	-0.15	-0.15	0.92	45
Math-Science Teacher	-0.13	0.13	-0.80	0.18	0.09	-0.01	-0.29	-0.12	0.82	31
Printer	0.29	-0.16	-0.21	-0.09	-0.80	0.18	-0.05	0.05	0.84	37
Policeman	-0.17	-0.77	-0.05	-0.04	-0.20	-0.15	0.06	0.23	0.75	26
Personnel Director	-0.50	0.17	0.07	0.54	0.25	-0.08	0.14	0.39	0.80	15
Public Administrator	-0.67	-0.09	-0.06	0.49	0.34	-0.23	0.03	0.19	0.90	24
Rehabilitation Counselor	-0.59	0.07	-0.18	0.27	0.61	0.05	0.14	0.20	0.90	21
YMCA Staff Member	-0.86	-0.03	-0.08	-0.35	0.11	-0.19	-0.15	0.01	0.94	22
Social Worker	-0.64	0.24	-0.17	0.05	0.51	0.01	0.31	0.25	0.92	19
Social Science Teacher	-0.70	0.19	-0.01	0.02	-0.17	0.57	0.11	0.20	0.92	25
School Superintendent	-0.09	-0.07	0.04	-0.27	-0.05	0.10	-0.11	0.78	0.73	40
Minister	-0.20	0.35	-0.23	-0.09	0.53	0.21	0.43	0.14	0.75	15
Librarian	-0.07	0.74	-0.19	-0.10	0.33	0.31	0.26	0.03	0.87	27
Artist	0.70	0.11	0.37	-0.[illegible]9	0.00	0.22	0.13	0.09	0.95	36
Musician Performer	0.10	0.62	-0.07	-0.61	0.04	0.16	0.23	0.12	0.86	40
Music Teacher	-0.42	0.56	0.04	-0.36	0.08	0.31	0.35	0.11	0.86	23
CPA Owner	-0.01	0.11	0.41	0.70	0.42	0.11	0.07	-0.22	0.92	18
Senior CPA	-0.05	0.00	-0.19	0.80	-0.20	-0.34	0.10	-0.11	0.86	22
Accountant	-0.11	-0.05	-0.07	0.84	-0.31	-0.12	-0.03	-0.11	0.85	20
Office Worker	-0.42	0.17	-0.03	0.57	-0.45	-0.06	-0.13	-0.11	0.76	23
Purchasing Agent	0.20	-0.18	0.34	0.13	-0.70	-0.21	-0.44	-0.03	0.93	30
Banker	0.17	-0.16	0.26	0.32	-0.72	0.24	-0.03	0.21	0.84	27
Pharmacist	0.13	-0.26	0.10	-0.06	-0.13	0.06	-0.88	0.14	0.91	29
Funeral Director	-0.02	-0.16	0.50	-0.27	-0.60	0.03	-0.29	0.17	0.82	28
Sales Manager	-0.03	-0.06	0.75	0.21	-0.41	-0.10	-0.28	-0.11	0.88	21
Real Estate Salesman	-0.03	-0.18	0.80	0.02	-0.41	0.10	-0.24	-0.06	0.92	34
Life Insurance Salesman	-0.13	0.03	0.86	-0.02	-0.12	0.26	-0.19	-0.03	0.88	26
Advertising Man	0.20	0.25	0.87	-0.18	-0.07	0.23	0.01	-0.02	0.95	28
Lawyer	0.18	0.04	0.78	0.19	0.34	0.29	0.13	0.07	0.89	30
Author-Journalist	0.48	0.22	0.70	-0.26	0.02	0.24	0.14	0.04	0.91	34
President - MFG	0.31	0.04	0.76	0.06	-0.27	-0.17	-0.20	0.01	0.82	20
Credit Manager	-0.80	0.01	-0.22	0.43	-0.02	-0.19	-0.08	0.05	0.90	21
Chamber of Commerce Exec.	-0.85	0.11	0.15	0.20	0.18	-0.26	0.13	-0.16	0.93	25
Physical Therapist	-0.48	-0.26	-0.60	-0.23	0.34	-0.27	0.03	0.00	0.90	[illegible]
Computer Programmer	-0.08	0.22	-0.43	0.32	0.19	-0.69	0.06	-0.09	0.88	31
Business Ed. Teacher	-0.81	0.09	-0.30	0.25	-0.21	0.06	-0.02	0.10	0.87	21
Community Rec. Admins.	-0.87	-0.10	-0.06	-0.14	0.20	-0.15	0.25	0.08	0.92	23
Variance	12.8	5.0	7.8	5.5	8.8	3.7	2.5	1.5		
Percent	27.0	10.6	16.4	11.5	18.4	7.8	5.2	3.1		

RECRUITMENT TO TEACHING: CAREER EXPECTATIONS OF SOUTH CAROLINA YOUNG PEOPLE

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Analyzing data from three modern societies (Norway, Germany, and the United States), Schwarzweller and Lyson (1977) explored the hypothesis that the teaching profession as a career choice or status attainment strategy, often serves as a feasible mobility option for ambitious young people whose occupational alternatives, for whatever reasons, are limited. Their findings showed, for example, that:

> ...in rural America...a career in teaching represents an important means by which lower status youths, girls in general, and particularly girls from lower status origins, can enhance their lot in life and hope to achieve a modest degree of upward social mobility.

For this paper, we take as a starting point the thesis offered by Schwarzweller and Lyson that teaching is often perceived as a transitional stage (i.e., a way up and out) on a ladder of upward intergenerational mobility. The stiff entrance requirements, keen competition, and long and rigorous training for many professional occupations (e.g., physician, lawyer, etc.) often can be met only by the most highly motivated, intelligent, and affluent aspirants. Teaching as a professional career choice, on the other hand, is marked by easier entre', a shorter period of training, and a less rigorous course of study. Teaching is, in fact, not only one of the most widely visible professional role models in America, but is also one of the most accessible professional career options. Thus, we would expect those youngsters who are not as academically talented, who come from lower status homes where monetary and motivational resources for higher education are limited, who grow up in areas where other professional role models are missing, or who are discouraged from pursuing other professional career lines because of their race or sex, to be more likely to choose a teaching career.

In this paper we will be especially concerned with the relationship between race and sex and the recruitment to teaching. In no study to our knowledge have the effects of race and sex been treated simultaneously in researching the social background of teachers. In fact, it is somewhat of a bewilderment, given the critical role teachers play in training and sorting talent in our society that so little is known about their social origins and background characteristics.

Researchers by Pavalko (1965), Payne and Dunkelberger (1977), Lortie (1975, Kronus (1965), Wright and Tuska (1968), and Getzels and Jackson (1963) have examined various factors associated with entre' into the teaching profession. (An excellent bibliography on exiting literature relating to the teaching profession can be found in Lortie (1975).) As Schwarzweller and Lyson note, however, most researches in this area tend to be more concerned with the personality attributes of young people entering teaching than with their social origins and characteristics. Further, many previous studies used relatively small, homogeneous samples and consequently their findings are relatively limited in scope. (Two exceptions are Pavalko's (1965) study of a cross section of Wisconsin youth and Payne and Dunkelberger's (1977) research on 1500 Alabama high school seniors.)

The purpose of this paper is to broaden our understanding of the conditions and factors that orient certain young people toward teaching. Specifically, we will compare the occupational orientations of a cross-section of black and white South Carolina high school seniors as they relate to pursuit of a teaching career. Our analytical approach is threefold. First, we shall compare the patterns of occupational choices among white boys, white girls, black boys and black girls. Second, our attention will be directed toward examining the relative attractiveness of teaching vis-a-vis other professions for each subgroup in our sample. Finally, to elaborate the effects of race and sex on the decision to pursue a teaching career we shall introduce local residence place, social class origin, and scholastic performance in school as conditions or factors that may further influence the teacher recruitment system toward favoring a particular type of entrant.

CURRENT RACE - SEX COMPOSITION OF U.S. AND SOUTH CAROLINA TEACHERS

It is well known that blacks have traditionally occupied proportionately fewer upper status-professional positions than whites. In 1970, for example, 15.5 percent of the white work force held professional jobs compared to only 8.3 percent of the black work force (see Table 1). For men these differences were even greater. Furthermore, although the census lists more than 80 different "professional, technical, and kindred" job titles, over 35 percent of blacks in this top prestige stratum were either primary or secondary teachers, while only 22.1 percent of the whites were teachers.

In South Carolina many of these racial disparities are magnified. For example, in 1970, over 70 percent of black women occupying professional positions were teachers compared to only 42.6 percent of similarly ranked white women. For South Carolina black men at the professional level, 45.6 percent were teachers, while only 7.1 percent of the white men were teachers. Clearly then, in the past, for South Carolina women and blacks attaining a professional status was almost synonomous with becoming a teacher.

To find reasons for the underrepresentation of blacks at the top eschelons of the occupational hierarchy and the overrepresentation of blacks and women as teachers at this status level, one need only look at the many formal and informal barriers and constraints that have long operated to discourage these groups from gaining admittance to other high status occupations. Implicit and explicit forms of segregation, discrimination, and tracking (along both sex and race lines) have effectively closed the gates to most professional jobs for all but a few minorities and women. Becoming a teacher, perhaps more than any other occupation then, has been a major avenue whereby those segments of the population denied admittance to other professional occupations (for whatever reasons) have been allowed to attain professional status. Thus, even though equal employment opportunity efforts, and affirmative action programs have been instituted to open-up previously closed professional positions to both women and minorities, teaching as a "proven" strategy for satisfying the status ambitions of women and blacks remains as important and viable career option and as such needs to be explored further.

RESEARCH PROCEDURES

Sample

Data for this study are part of USDA Research Project S-81: "Development of Human Resource Potentials of Rural Youth in the South and Their Patterns of Mobility."[1] Data were collected from high school seniors in South Carolina in 1969. Comparable data were also gathered in 1968 from seniors in Alabama, Georgia, Louisiana, Mississippi, and Texas. The study population under consideration here consists of the total South Carolina segment only (N = 4376). The South Carolina portion is a state-wide stratified random sample of 1,510 white boys, 762 black boys, 1,464 white girls, and 762 black girls in 41 rural and urban high schools in 26 South Carolina counties. Data were obtained through self-administered questionnaires. All seniors present in school the day the questionnaire was administered are included in the study. No attempt was made to gather information from those absent on the day the field worker visited the school. It should be noted that in 1969, most South Carolina high schools were operating under the so-called "freedom of choice" method of assigning pupils to school by race. Our sample includes students from 27 primarily white (over 50 percent) high schools and 14 primarily black (over 50 percent) high schools. (For a more detailed account of the data collection procedures and the population composition for the South Carolina segment of S-81, see Boyd; 1970).)

Study Variables

Occupational career plan, the main problematic variable, was determined from the response to the question: "Sometimes we are not always able to do what we want most. What kind of job do you really

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1. USDA Research Project S-81 expired in 1976. A new research project - S-114: "Defining and Achieving Life Goals: A Process of Human Resource Development" has since been instituted to extend and expand upon the work begun under S-81.

expect to have most of your life?" (This question followed a more general question about the student's career aspirations: "If you were completely free to choose any job, what would you desire most as a lifetime job?") Responses were edited and coded according to categories compatible with the occupational classification system used by the U.S. Bureau of Census. Teacher was coded as a separate occupational choice in the "Professional, Technical, and Kindred" stratum.

The main job of the major money earner in the home is used as an indicant of social class origin. This information was obtained from an open-ended question and coded according to census categories. For our purposes, the ordinal census divisions are reduced to a dichotomy comparing manual and nonmanual occupations.

Scholastic performance was assessed by a senior's final grade point average or relative status in the classroom. Each senior was ranked in relation to his classmates within his high school. A dichotomy separating the "lower" half from the "upper" half is employed in this paper.

SEX AND RACE DIFFERENTIALS IN PATTERNS OF CAREER CHOICE:

Boys and whites are generally more inclined toward professional careers than either girls or blacks (Table 2). Close to 50 percent of the white boys in our study population, for example, plan to pursue a professional career line. On the other hand, only 35 percent of the black girls in our sample expect to attain professional status.

The most popular professional choice for white boys was engineering, while teaching was the most frequent choice for white girls and blacks. In fact, relative to other professional alternatives, teaching represented almost half of all professional choices for white girls and close to 40 percent of all professional choices for both black boys and girls. However, teaching comprised only 12.8 percent of all professional choices for white boys.

Looking at correlations within sex and race categories (Table 3), we find that, compared with their white peers, black boys are farr more inclined to choose teaching relative to other professional careers (Q = .59). Further, white girls are more inclined toward teaching careers than are white boys (Q = .72). However, there are negligible differences between black girls and black boys (Q = .08) and between white girls and black girls (Q = -.16) in the proportion selecting teaching as a professional choice.

Finally, it should be noted that the proportion of white girls relative to all white youths who aspire to become teachers is 77.1 percent. For blacks, however, girls represent only 59.5 percent of all those expecting to become teachers. When compared to current female/male teacher ratios in the U.S. (70/30 - white; 78/22 - black) and in South Carolina (84/16 - white; 79/21 - black), these findings clearly show that a new avenue of upward social mobility is opening up for black men.

To briefly summarize, then, white boys not only have higher career expectations than the other sub-groups sampled here, but the range of professional occupations they expect to attain is also broader and more varied. Teaching represents only one of a number of feasible professional options for this group. For white girls and blacks, on the other hand, the dominant theme that characterizes their professionsl status aspirations is to become a teacher.

We shall now elaborate these basic race/sex relationships by introducing three conditional factors (residence place, social class origin, and grade achievement) that may effect a person's decison to enter teaching.

THE EFFECT OF SOCIAL CLASS ORIGIN

Social class origin as conceived here, represents a youngster's position within the social stratification system that is characterized by greater or lesser life chances relative to other classes. A person's social class position provides both a structural basis as well as a normative frame of reference from which career goal emerge. Not surprisingly, regardless of race or sex, seniors from nonmanual background homes have higher professional ambitions than their manual background peers (Table 4).

In terms of the relative popularity of teaching as a professional career choice, however, social class origin has no effect for either black or white boys and only a negligible effect for black girls (Q = 195) or white girls (Q = .178) (Table 4). The relationships for both groups of girls, though weak, show that nonmanual girsl are more inclined toward teaching than their manual background counterparts. These findings are unexpected since our thesis. consistent with earlier work by Schwarzweller and Lyson, suggests that teachers should be the more popular professional choice among young people from lower social class origins.

Reasons for the inconsistency are somewhat unclear, but may have to do with the nature of the occupational choice coding scheme employed in this study. Schwarzweller and Lyson employed a modified Edwards (1943) format and treated some "borderline" professional choices (e.g., nursing, computer programmer, etc.) as non-professional occupations. In the present study these same occupational choices were coded according to census categories and included in the professional ranks. Recoding the present data, for example, so that nursing and other "para-professional" medical career (e.g., medical technologist, physical therapist, etc.) are dropped from the professional category shows that correlation coefficients between teacher choice and social class origin are reduced somewhat for black girls to .14 and are reversed to -.08 for white girls, thus approaching the expected relationships. A more precise replication of the earlier study is, unfortunately, not possible.

One additional set of relationships in Table 4 should also be noted. Professional career expectations within class categories for whites are very similar for boys and girls. About 60 percent of the high status white boys and girls are aiming for professional jobs while only about 35 percent of the low status whites have similar expectations. In other words, the opportunity structures of white South Carolina high school seniors as they relate to professional status attainment are not affected by sex. (Of course white girls are clearly more oriented toward teaching than white boys, regardless of class origin.)

For blacks, on the other hand, although no sex differences are found in the professional status expectations of low social class youth, among high class seniors substantially more girls (64.5 percent) plan to obtain professional level positions than high status boys (51.3 percent). Furthermore, not only are upper status black girls more oriented toward professional occupations in general than boys, but the proportion expecting to become teachers is also much higher (30.2 percent vs. 18.4 percent). Among blacks from manual social class backgrounds, however, both professional and teacher expectations are similar for boys and girls. In short, although Tables 1-3 show that black males, in general, use teaching as a mobility ladder and facilitator, Table 4 reveals that for blacks from the higher levels of the socio-economic status hierarchy it is either normatively more acceptable or structurally easier for girls to become teachers.

THE EFFECT OF LOCAL RESIDENCE PLACE

With few exceptions, most previous researches have found that, regardless of the criteria for categorizing communities, youth from small, more rural neighborhoods, are less likely to aspire toward high occupational status than youth from urban areas or large towns. This is not surprising since not only is the opportunity structure in rural areas narrower and more restricted than that found in the cities, but also fewer high status role models exist in the rural hinterlands compared to the cities. (Teacher and minister are probably the most "visible" professions in rural America.)

In the present study, with the exception of white girls, teaching is a more popular career choice among those seniors reared in small town, open country, or farm environs than among those raised in the larger towns and cities of the state (Table 5). We should note, of course, that rural youth are generally less inclined toward professional status than their urban peers.

The effect of rural residence is stronger for boys, especially white boys (Q = .372) than for girls. In fact, among white boys aiming toward professional careers, twice as many seniors from rural backgrounds (19.4 percent) expect to become teachers as urban seniors (9.9 percent). For black boys the association between rural residence background and teacher choice is not as strong (Q = .197). While over 40 percent of rural black boys expect to become teachers, over 30 percent of their more urban counterparts held similar expectations.

For black girls there is a relatively weak association between rural residence and teacher expectation (Q = .131). Slightly more rural girls (42.6 percent) plan to become teachers than urban girls (36.4 percent). For white girls, however, it is interesting to note that although those from urban areas of South Carolina are more oriented toward professions than their rural cousins (Table 5), the relative proportion expecting to become teachers is the same.

SCHOLASTIC PERFORMANCE

High academic performance in school is generally regarded as an important "stepping stone" for admission to college and concommittantly entre' into the professions. Grades as measures of both intellectual ability and skill in coping with the social order of the classroom are accepted as legitimate sorting criterion in our educational system. A person who attains high grades has, in effect, attained the endorsement of the society in general, and the school system in particular, to pursue high status occupational goals.

Not surprisingly, Table 6 shows that, among all subpopulations in this study, scholastic performance is positively associated with a decision to pursue a professional career track. However, with the exception of white girls, Table 6 also reveals a weak positive relationship between academic achievement and popularity of teaching as a professional career option. For white boys and blacks, in other words, proportionately more low academic achievers aspire to teaching than their more scholastically talented counterparts. This finding, consistent with our research hypothesis, suggests that teaching may be viewed as a less challenging and rewarding professional career line and consequently one whose entrance requirements are less strigent vis-a-vis other professions.

For white girls a moderate negative relationship (Q = -.484) exists between grade rank and teacher choice. Over 50 percent of the professionally oriented girls ranked in the upper half of their graduating class expect to become teachers. On the other hand, only slightly over one-fourth of the lower achievers manifest similar expectation patterns.

The fact that close to 60 percent of the better qualified white girls in the present study are aiming for professional careers (compared to only 44.8 percent of similarly ranked black girls) and that over half of these expect to become teachers suggests that teaching is a very convenient, socially desireable, and readily accessible professional career option. High achieving black girls (and to a lesser extent black boys), on the other hand, apparently confront a more limited opportunity structure. Superior academic performance in high school does not manifest itself in greatly increased teacher expectations. Furthermore, among black girls, over 55 percent of the high scholastic performers aim only for lower level, non-professional (i.e., white collar/blue collar) occupations.

In any case, more thorough examination and clarification of the reasons behind the unique and somewhat unexpected relationship between scholastic performance and professional/teacher expectations for white girls is an area of research that merits further consideration.

SUMMARY AND DISCUSSION

This paper continues a line of research into the social background characteristics of young people selecting teaching as a career choice. Specifically, using data collected from a stratified random sample of South Carolina high school seniors, we examined the relationship among race, sex, and teacher recruitment. Social class origin, local residence place, and scholastic performance were introduced to further specify the effects of race and sex on teacher choice. Our guiding research hypothesis, drawn from earlier work by Schwarzweller and Lyson (1977), suggested that a decision to enter teaching serves as a workable mobility option for ambitious young people whose professional career alternatives, for whatever reasons, are limited.

Our findings show, not surprisingly, that white boys not only have higher occupational expectations than either white girls or blacks, but that the range of professional choices they aim for is wider and more varied. Teaching attracts only 12.8 percent of all professionally oriented white boys.

For blacks and white girls, on the other hand, teaching is by far their most important professional career option. In fact, nearly half of the 41.6 percent of the white girls aiming for professional jobs expect to become teachers. The American teacher recruitment system, as it manifests itself in the career expectations of South Carolina high school seniors, then, is clearly more attractive and presents fewer entrance barriers to two groups (women and blacks) who traditionally have been discouraged from entering other professional occupations.

With the exception of white girls, the effects of three control factors (social class origin, local residence place, and scholastic performance) on the patterning of professional and teacher plans lends additional support to our exploratory hypothesis. Correlation coefficients in Tables 3-6 show that seniors who come from lower social origins, who are reared in rural environs, and who perform less well in school are, in general, more likely to choose teaching as a professional career plan than their higher status, urban, and more academically talented counterparts. For boys especially, it is interesting to note that, although the proportion of professionally oriented seniors expecting to teach differs greatly by race, our control factors operate in the same fashion for both blacks and whites.

In conclusion, this paper shows that the structuring of professional career ambition is primarily dependent on the ascribed attributes of race and sex. Those most favored in the pursuit of professional occupations are white males. Women and minorities, on the other hand, are in a more disadvantaged position. They confront a professional selection system characterized by overt and covert forms of segregation, discrimination and tracking.

Furthermore, within race and sex categories, the nature and range of professional career alternatives are further influenced by a youngster's social and scholastic origins. Generally speaking, however, our data indicate that these "secondary" influences operate only in a limited sense and with few exceptions do not dampen the effects of race or sex.

Today, a decision to pursue a career in teaching serves not only to satisfy the status ambitions of those groups denied other professional opportunities, but also to provide these groups with a leg-up on the ladder of intergenerational mobility. However, in the future, as the professional strata broadens and entre' to all professions is greased by formal and informal pressures for women and minorities, race and sex may become less deterministic while the effects of social class, scholastic performance, local residence place, and other background factors gain in relative significance and importance.

BIBLIOGRAPHY

Boyd Virlyn A.

1970 Aspirations, Expectations, and Attitudes of South Carolina High School Students: Agricultural Economics Report 335. Department of Agricultural Economics and Rural Sociology, Clemson University, Clemson, South Carolina.

Edwards, Alba M.

1943 "Comparative Occupational Statistics for the United States." Washington, D.C., U.S. Government Printing Office.

Getzels, J.M., and P.W. Jackson

1963 "The Teacher's Personality and Characteristics." Pp. 506-582 in N. L. Gage (ed.), Handbook of Research on Teaching. Chicago: Rand McNally.

Kronus, C.

1969 "Occupational Career Decisions: Temporal Patterns and Sociological Correlates." Unpublished Ph.D. dissertation, University of Chicago.

Pavalko, Ronald M.

1965 "Aspirants to Teaching: Some Differences between High School Senior Boys and Girls Planning on a Career in Teaching." Sociology and Social Research 50 (October): Pp. 47-62.

Payne, Carol D. and John E. Dunkelberger

1977 "Attraction of Youth to the Professions: The Process of Goal Identification." In Rural Sociology in the South: 1977 (Proceedings of the Rural Sociology Section of the Southern Association of Agricultural Scientists) Harsha N. Mookherjee (ed.): No. 18.

Lortie, Dan C.

1975 Schoolteacher. Chicago: University of Chicago Press.

Schwarzweller, Harry K. and Thomas A. Lyson

1978 "Some Plan to Become Teachers: Determinants of Career Specification Among Rural Youth in Norway, Germany, and the United States." Sociology of Education, (forthcoming).

United States Bureau of Census

1970 Summary: 1970 Census of Population. Washington, D.C.: U.S. Government Printing Office.

Wright, B.D., and S.A. Tuska

1968 "From Dream to Life in the Psychology of Becoming a Teacher." School Review 76: Pp. 253-193.

Table 1. Professionals as Percent of Total Work Force and Teachers as Percent of all professionals, in the United States and South Carolina by race and sex.[1]

Percentage of work force classified as "professional"	Total	White Males	White Females	Black Males	Black Females
United States	14.8	15.0	16.3	5.8	11.3
South Carolina	11.5	11.7	15.5	3.3	10.3
Percentage of those classified "professional" who are teachers					
United States	22.4	10.7	39.3	20.0	44.7
South Carolina	29.0	7.1	42.6	45.6	70.5

[1] Data source: U.S. Census: 1970 Census of Population. "General Social and Economic Characteristics." PC(1)-C1; and U.S. Census: 1970 Census of Population. Characteristics of the Population." Part 42, South Carolina.

Table 2. Occupational Career Choice by Race and Sex.

Occupational Choice	Whites		Blacks	
	Boys	Girls	Boys	Girls
	-- Percent --			
Teacher	6.2	19.9	13.0	13.9
Engineer	10.5	--	3.1	--
Medical*	3.8	9.1	1.3	7.8
Other Prof.	27.8	12.7	18.7	13.3
Total Prof.	48.3	41.6	36.1	35.0
White Col.	20.9	34.4	14.5	36.4
Manual	30.8	8.8	49.4	24.9
Housewife	--	15.2	--	3.7
Total %	100.0	100.0	100.0	100.0
Total (N)	(1379)	(1438)	(524)	(722)
Teacher as percent of all professional choices	12.8	47.7	36.0	39.7

*Includes Doctor, Nurse, and other medical occupations classified as Professional by the U.S. Census.

Table 3. Associations (Yules Q) between inclination toward teaching as a professional occupational choice and race and sex.

Boys vs. Girls[1]	
White	.724
Black	.079
White vs. Black[2]	
Boys	.587
Girls	.163

[1] Relative inclination of girls towards teaching versus other professions.

[2] Relative inclination of blacks towards teaching versus other professions.

Table 4. Occupational career choice by father's occupational status by race and sex.

	White Boys		White Girls		Black Boys		Black Girls	
Occupational choice	Manual	Nonmanual	Manual	Nonmanual	Manual	Nonmanual	Manual	Nonmanual
	-- Percent --							
Teacher	5.2	6.8	14.7	32.1	13.4	18.4	12.6	30.2
Other Professions	31.6	51.2	20.3	30.9	22.3	32.9	21.3	34.3
White collar/Manual*	63.2	42.0	65.0	37.0	64.4	48.7	66.1	35.4
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (N)	(563)	(731)	(523)	(619)	(337)	(76)	(436)	(96)
Degree (Q) of association: relative inclination of manual worker seniors towards teaching vs. other professions	.098		-.178		.034		-.195	
Teacher as % of all professional choices	14.0	11.8	42.1	51.0	37.5	35.9	37.2	46.8

*Note: In this and subsequent tables, "white collar", "manual worker", and "farmer" categories have been combined into a single "lower status" category for comparative purposes. All cases of missing information, for whatever reason, have been omitted.

Table 5. Occupational career choice by residence place, race and sex.

	White Boys		White Girls		Black Boys		Black Girls	
Occupational choice	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
	-- Percent --							
Teacher	7.2	5.5	18.5	26.9	12.1	14.9	13.1	16.4
Other Professions	29.9	50.2	20.1	29.6	17.7	32.3	17.6	28.6
White collar/Manual	62.9	44.3	61.4	43.8	70.2	52.8	69.4	55.0
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (N)	(833)	(542)	(692)	(724)	(322)	(195)	(421)	(269)
Degree (Q) of association: relative inclination of rural seniors towards teaching vs. other professions.	.372		.000		.197		.131	
Teacher as % of all professional choices	19.4	9.9	47.9	47.9	40.6	31.5	42.6	36.4

Table 6. Occupational career choice by scholastic performance rank by race and sex.

	White Boys		White Girls		Black Boys		Black Girls	
Occupational choice	Lower Rank	Upper Rank	Lower Rank	Upper Rank	Lower Rank	Upper Rank	Lower Rank	Upper Rank
	-- Percent --							
Teacher	4.8	6.3	8.0	30.2	11.2	16.8	12.8	18.6
Other Professions	31.1	58.1	21.9	28.9	16.8	36.3	16.5	26.2
White collar/Manual	64.1	35.5	70.1	40.9	72.0	46.9	70.0	55.2
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (N)	(476)	(394)	(251)	(523)	(107)	(113)	(133)	(183)
Degree (Q) of association: relative inclination of manual worker seniors towards teaching vs. other professions	.175		-.484		.180		.043	
Teacher as % of all professional choices	13.5	9.8	26.7	51.1	40.0	31.7	43.6	41.5

OCCUPATIONAL CHOICE AMONG COLLEGE AGRICULTURAL STUDENTS AND COMMITMENT TO A CAREER IN AGRICULTURE

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The changing profile of students enrolled in schools of agriculture has drawn attention to factors influencing the decision to pursue a major and an eventual career in agriculture. Expanded and more varied curricula offerings in many colleges of agriculture are attracting an increasing number of students interested in agriculture and agriculture related careers. Of special interest is the increasing number of women pursuing careers in agriculture, a previously male dominated field of employment. Such changes have drawn attention to and raised questions about the social factors and characteristics critical in a student's decision to major in agriculture and, the relation of this education choice to eventual career goals.

Theoretical Perspectives

In American society today there exists a cultural doctrine which is distinctive in two respects. First, striving for success on the part of the individual is a socially defined expectation. Second, this expectation is appropriate for everyone (Merton:1957:167). From this highly generalized achievement orientation evolves the still very generalized goal of success in the occupational system (Parsons:1951:237).

Economists, psychologists and vocational counselors have developed specialized theories of occupational choice; but little attention has been directed to the social factors determining the occupational choice. Sociologists, when considering the phenomenon, have equated occupational choice with aspiration, defining it to mean only the psychological preference one has for a particular occupation (Kuvlesky and Bealer:1966:265).

Ginzberg (1972:171) refers to the concept of occupational choice as an extended process of occupational goal selection resulting in the eventual attainment of an occupational status. He also suggests that an individual's interests, capacities and values may be in conflict. When this is true, he sees the individual as compromising among a variety of interests in selecting an occupation and career.

Blau's (1956:563) conception of occupational choice is similar in a number of respects to that of Ginzberg. The choice process is viewed as one of compromise between preferences for aspirations and the expectations of attaining entry into various occupations.

Other sociologists have directed considerable attention to the social origins of persons in particular occupations. Rather than focusing on the occupational decisions of the individual, this line of investigation deals with the way in which occupations selectively recruit persons with specific personal or social characteristics (Pavalko:1971:72).

Theories of selective recruitment exist for the choice of an occupation as well as for the choice of an educational tract. One must first recognize that these two choice processes parallel and compliment one another. Thus, to discuss occupational choice without considering educational career decisions implies an artificial view of reality. Sociologists generally agree that educational and occupational career decisions occur simultaneously and interact (Pavalko:1971:61).

Although the majority of students entering college change their initial career decisions during the ensuing four years, Astin and Panos (1969:218) hold that there are several factors that may be used in the prediction of the ultimate career choice. Factors identified are the individuals's sex, the father's education level and income, availability of student financial aid and contacts with significant others as well as existing social and economic conditions.

The structuralist perspective presented in these theories is quite different from theories that place emphasis on the values one holds for a particular occupation as a determinant of occupational choice. Social values must be inferred from behavior and are measured by an individual's reaction to certain generalized conceptions (Schwarzweller:1968:127). Blaikie maintains that social values are the criteria which people use as standards of judgment when making choices. Emphasis is on the origin of the values, changes in the values and the relationship between value changes and changes of occupational choice. Additionally Blaikie (1971:313) stresses that the socialization received on the college scene is critical to the choice of an occupation.

Related to the system of values within which a person operates is the concept of commitment (Becker:1960:33). Commitment involves independent observation of prior actions related to a consistent line of activity, a recognition by the individual of the original interest in a present activity and then future decisions based on the previous behavior. Taken alone these acts are not necessarily significant but together they constitute a commitment to some goal.

Study Objective

The central focus of this paper is educational and occupational choice, specifically the relationship between occupational choice and pursuance of an educational tract represented by a curricula within the context of a School of Agriculture as it relates to the socializing experiences received during high school and college as well as work experience. It is hypothesized that these varied types of experiences discriminate in the decision to pursue a college major in agriculture and an eventual career in the broad field of agriculture. Furthermore, together these experiences constitute a commitment to an agriculture related career goal.

Methodology

Data were obtained from mail questionnaires sent to a sample of students enrolled in the school of agriculture at a land grant university in the South. Usable questionnaires were obtained from 362 students representing cumulative a response rate of 62 percent.

Sample Design

This study is a part of a larger regional research effort which includes students currently enrolled in schools of agriculture and home economics at land grant institutions in the southern region. Known as Southern Regional Project S-114, the research is supported by the Cooperative State Research Service, United States Department of Agriculture and the agriculture experiment stations of participating institutions in the Southern Region. For purposes of this study only data provided by students enrolled in the school of agriculture at Auburn University are used.

In order to analyze the influence of socialization factors on choice of an agriculture major and career goal, it was necessary to develop a logic for grouping or classifying the various agricultural majors available. It must first be recognized that although a major is found within the school of agriculture, its content and thrust may vary considerably in its relation to agriculture. Additionally, some majors in the School of Agriculture are designed specifically for providing training in production agriculture while others are oriented towards agribusiness and work in agriculture related business and industry. Still others represent basic science and nonagricultural orientations with no direct agriculture identification. Hence, the reported college majors were classified into three groups - production agriculture, agribusiness and nonagriculture. Placement of the various majors in each category was made by the researcher in cooperation with the Dean of the School of Agriculture.

On the same basis it was recognized that although a student has chosen a college major offered in the School of Agriculture, this does not necessarily mean that he or she expects to pursue an occupation in the field of agriculture. Therefore, the same classifactory scheme of production agriculture, agribusiness and nonagriculture was used for classifying the choice of an occupation. Again, personnel in the Dean's office assisted with decisions concerning assignment of specific occupations in the three categories.

To determine the respondent's choice of a college major, each respondent was asked to list their present major(s) or area of academic concentration(s). The choices were then classified into the three categories of production agriculture, agribusiness and nonagriculture. Of the students in the sample, approximately 22 percent were enrolled in production agriculture curricula, and 13 percent in agribusiness curricula. The majority of the students (63.9 percent) were enrolled in nonagricultural curricula.

A two question sequence was used to determine the occupational aspirations and expectations. The item used to determine occupational expectation immediately followed one on aspiration and involved a transitional lead in. The question was, "Sometimes we are not always able to do what we want most.

What kind of job do you really expect to have most of your life? Please give exact job." Open ended responses produced by this question were coded according to a listing of agricultural occupations (Hoover:1969). To this listing were added all additional agricultural occupations not included in the original list.

Explanatory Variables

Socialization of work attitudes through consistent lines of activity is believed to be critical to the choice of an occupation and the commitment to that choice. In this study measures of socialization involved five types of experiences - residential background, father's occupational type, high school, college and work experiences.

Residential background was determined by using the question "Please indicate the kind of place you have lived in most of your life (or for the longest period in your life):" The six response categories ranging from most rural to most urban were collapsed into three: Urban, rural non-farm and farm.

Father's occupational type, coded in the same manner as educational and occupational choices was obtained by asking each respondent: "What is your father's current occupation? Be specific and detailed. If disabled, retired or deceased please indicate what his occupation was most of his life. If farmer or rancher, indicate his major agricultural product, how many acres he owns, and how many acres he operates." Using the listing of agricultural occupations, occupations reported were coded without regards to status and then were classified as production agriculture, agricusiness and non-agriculture.

High school experiences involving agriculture were determined by asking the question, "While enrolled in high school, did you participate in any of the following activities?" The agriculture related activities used included 4-H, FFA, and other vocational clubs such as Future Teachers, and DECA. Three responses were solicited: (1) did not participate, (2) participated and (3) participated as a leader or officer. Scores for these agriculture related activities were summed to determine the extent of participation. Participation as well as leadership responses were each given a score of 1.

Employment experiences were determined by asking respondents "Please indicate the kinds of work experiences you have had by giving a response for each work experience." The types of experiences listed were (1) farm or ranch work on home farm, (2) farm or ranch work elsewhere as a hired employee, (3) other agriculture related work and (4) other work experiences. A simple yes or no response pattern was indicated for determining if the respondent had had any of four types of work experiences. Yes responses were assigned a score of 1 and summed across all types except other work experiences to determine the number of different work experiences.

Participation in college agricultural related activities was ascertained by asking "Please indicate to which of the following agricultural organizations you belong and if you were a leader or officer in those organizations." The following types of college organizations were listed: departmental clubs, judging teams, honor fraternities/sororities, college 4-H/FFA and student agricultural council. Participation as well as leadership responses were scored 1 for every type organization in which the student participated. These scores were summed across all activity types to provide a college agriculture participation index score.

Results

Educational Choice

Five hypotheses were generated for examining the relationship of structural factors to the choice of a college major in agriculture. Agricultural majors being compared were production agriculture, agribusiness and non-agriculture curricula within the School of Agriculture. Significant differences were predicted with respect to residential background, father's occupational status, high school, work and college experiences.

Residence

Residence was found extremely significant (beyond the .001 level) in the choice of a college major in agriculture, Table 2. The proportion of students in each type curricula coming from farm residences ranged from 32 percent in production agriculture to only 7 percent in non-agriculture curricula. Sixty-nine percent of the non-agriculture students were from urban areas. The proportion of students in each type of curricula who came from rural non-farm residences was relatively constant at 24 to 28 percent.

Father's Occupational Type

Occupations in this category were coded into three general categories. Father's occupational type was found statistically significant in the choice of a college major. Over half of the production agriculture students reported father's occupations that fell in the non-agriculture category while over 90 percent of the students in non-agriculture curricula reported father's whose occupational type of agribusiness students were more closely related to non-agriculture students than those in the production agriculture curricula. The proportion of agribusiness students whose fathers had production agriculture occupations was 24 percent compared to 73 percent with nonagriculture occupational types.

High School Experience

It was hypothesized that the greater the participation in agriculture related activities in high school, the more likely one would be to choose a production agriculture major and less likely to choose a nonagriculture major with the choice of agribusiness falling somewhere in between. A distinct pattern in the direction hypothesized was observed. Over half (53.1 percent) of the production agriculture majors had participated in one or more agriculture related activity in high school. Slightly fewer agribusiness majors (44.7 percent) and only 33 percent of the nonagriculture majors had participated in agriculture related activities during their high school years. A more distinct difference was found among those participating in two or more activities. More than one fourth (27.8 percent) of the production agriculture students had participated in two or more agriculture related activities with decreasing participation found for the agribusiness (14.9 percent) and (7.8 percent) majors.

Work Experience

The hypothesis was that the more numerous the agriculture related work experiences the more likely a student is to choose a major in agriculture. This relationship was found statistically significant (.0001) in the direction predicted. Only about one fourth of the students choosing production agriculture and agribusiness majors lacked any agricultural work experiences, while similar proportions of students in these curricula reported three or more such agriculture related work experiences. Only 8 percent of the nonagriculture majors reported having three or more agriculture related work experiences and almost half (45 percent) had no previous work experiences.

College Experience

Agriculture related college experiences were found statistically significant (.001) in association with the choice of different types of agriculture majors. Less than half of the students pursuing majors in production agriculture (44 percent) reported having no college experiences in agriculture related activities while a much larger proportion (66 percent) of the nonagriculture students reported having no such activities. The production agriculture and agribusiness majors presented a highly similar pattern as to the number of agriculture related activities in which they had participated with over one third having participated in at least one such activity and slightly more than 20 percent reporting participation in two or more activities. Only 10 percent of the nonagriculture majors had any extensive college agriculture related experiences.

Occupational Choice

To examine the relationship of socializing influences on the choice of an occupation, five hypotheses were generated. Each hypothesis predicted significant differences between the choice of an occupation in production agriculture, agribusiness or nonagriculture fields and the independent factors of residential background and father's occupational type, high school, work and college experiences.

Residential Background

The influence of residential background on choice of an occupation was not found significant. Differences in the proportions of students from each residential type that chose production agriculture, agribusiness or nonagriculture occupations were minimal. Over half of the students choosing each type of occupation were from urban residences with the largest percentage

(61.9 percent) occurring for those choosing careers in agribusiness. Students oriented toward agribusiness occupations were least likely to come from rural non-farm backgrounds. The proportions of students choosing production agriculture and nonagriculture careers from all three residential backgrounds were very comparable.

Father's Occupational Type

The influence of father's occupational type on the choice of an occupation was found significant. Of those students choosing production agriculture careers three fourths of their father's had nonagriculture occupations while 82 percent of those choosing nonagriculture careers had father's with nonagriculture occupations. Students choosing agribusiness careers were more similar to those choosing nonagriculture occupations than to those choosing production agriculture in terms of differences in father's occupational type.

High School Experience

When related to the choice of an occupation in agriculture, agriculture related high school experiences were not found significant. Approximately two thirds of those choosing careers in either of the three occupational areas had participated in no agriculture related activities during their high school years. The pattern of high school agriculture participation followed a highly similar pattern for both production agriculture and nonagriculture career types. Only the agribusiness career type showed variation. For these students, one fourth had participated in two or more agriculture related activities during high school. This represented a considerably larger proportion with a higher involvement rate than occurred among students choosing either a production agriculture or nonagriculture career.

Work Experiences

Agriculture related work experiences were not found significant in the choice of an occupation in the field of agriculture. The number of agriculture related work experiences varied little among students making the three types of career choices. Slightly over one third of those choosing careers in the three areas reported no agriculture related work experiences. Approximately half the students in each category had at least one or two agriculture related work experiences but only a small percentage (approximately 15 percent) had three or more agriculture related work experiences. Contrary to the hypothesized direction however, students desiring production agriculture careers did not indicate the most and nonagriculture careers the least experiences. In fact, just the opposite was found.

College Experience

Although significant in influencing the choice of a college major, participation in agriculture related college activities was not associated with choice of an expected occupation. Fewer than half of the students choosing careers in any of the three areas reported participating in agriculture related activities during college. Only about 15 percent reported having participated in three or more such activities during their college years.

Discriminant Analysis

Discriminant analysis was employed to determine which of the six variables previously discussed discriminated most between production agriculture, agribusiness and nonagriculture majors and similarly for the three types of expected occupations. Additionally the classification technique of discriminant analysis was used to verify the typology developed for classifying educational and occupational choices.

Educational Choice

For those choosing majors in the areas of production agriculture, agribusiness and nonagriculture four variables, high school experiences, residential background, college experiences and work experiences, were found to discriminate in the choice of a college major. Father's occupational type was not included.

Although four variables were retained in the discriminant function the amount of variation explained was low. The sum of the eigenvalues indicated that slightly over 19 percent of the total variance can be explained. Even though the amount of variance explained is small, it is statistically significant (beyond the .001 level) as determined by converting Wilk's Lambda to Chi square. Nevertheless, the classification procedure revealed that 66.5 percent of the cases were correctly classified.

Occupational Choice

In the choice of an occupation in production agriculture, agribusiness and nonagriculture fields, only two variables were retained in the discriminant function. This decision was based on the F score to enter or remove a variable. The two variables found to discriminate were father's occupational type and high school experiences, residential background, and sex. However, of these variables only the father's occupational status was statistically significant. Through the stepwise procedure significance of change did not reach the .05 level when residential background, high school experiences and sex were introduced.

Although statistically significant, this discriminant function explains just slightly more than 14 percent of the total variance in the choice of an occupation in the broad based category of agriculture. Moreover, the eigenvalue does not meet the 0.15 criterion.

The prediction results show that over half (59.5 percent) of the cases were correctly classified.

Summary

Support exists for the contention that socializing influences play a significant role in the decisions made by individuals concerning the choice of a college major and the eventual occupations they expect to enter. Additionally, these experiences are consistent and therefore serve as commitment to the choices made. The use of discriminant analysis supports the typology used for classification of the educational and occupational choices in the broad based field of agriculture.

References

Becker, Howard S.
1960 "Notes on the concept of commitment." American Journal of Sociology 65:32-40.

Blaikie, Norman H.
1971 "Towards a theoretical model for the study of occupational choice." Sociology 5:313-333.

Blau, Peter M., J. W. Gustad, R. Jessor, H. Parnes and R. C. Wilcock
1956 "Occupational choice: a conceptual framework." Industrial and Labor Relations Review 9:531-543.

Ginzberg, Eli
1972 "Toward a theory of occupational choice: a restatement." Vocational Guidance Quarterly (March 169.

Hoover, Norman K.
1969 Handbook of Agricultural Occupations, 2nd ed. Danville, Illinois: The Interstate Printers and Publishers, Inc.

Kuvlesky, W. E. and R. C. Bealer
1966 "A clarification of the concept of occupational choice." Rural Sociology 31:264-270.

Merton, Robert K.
1957 Social Theory and Social Structure. Glencoe: The Free Press.

Parsons, Talcott
1964 The Social System. Toronto: Collier-Macmillan, Ltd.

Pavalko, Ronald M.
1972 "Recruitment to teaching: patterns of selection and retention." Sociology of Education 43:340-353.

Schwarzweller, Harry K.
1960 "Values and occupational choice." Social Forces 39:126-134.

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TABLE 2

RESIDENTIAL BACKGROUND, FATHER'S OCCUPATIONAL TYPE, HIGH SCHOOL, COLLEGE AND WORK EXPERIENCES OF PRODUCTION AGRICULTURE, AGRIBUSINESS AND NON-AGRICULTURE MAJORS AT AUBURN UNIVERSITY

College Major	High School Experiences			Work Experiences			College Experiences			Residential Background			Father's Occupational type		
	None %	One %	Two or More %	None %	One %	Two or More %	None %	One %	Two or More %	Urban %	Rural non-farm %	Farm %	High %	Intermediate %	Low %
Production Agriculture	46.8	25.3	27.8	21.5	54.4	24.1	44.3	35.4	20.3	43.0	25.3	31.6	34.7	16.0	49.3
Agribusiness	55.3	29.8	14.9	27.7	53.2	19.1	42.6	34.0	23.4	46.8	27.7	25.5	40.0	22.2	37.8
Non-Agriculture	77.0	15.2	7.8	45.2	47.0	7.8	66.1	23.5	10.4	68.7	24.3	7.0	50.0	19.8	30.2
Total	67.4	19.4	13.2	37.6	49.4	12.9	58.1	27.5	14.3	60.1	25.0	14.9	45.2	19.3	35.5
	N = 356 Chi Square = 33.180 4 d.f. p -.000 Missing Observations = 4			N = 356 Chi Square = 24.629 4 d.f p<.0001 Missing observations = 4			N = 356 Chi Square = 18.027 4 d.f. p< .001 Missing observations = 4			N=356 Chi Square = 36.405 4 d.f. p .0000 missing observations = 4			N=332 Chi Square = 42.6612 f d.f. p .0000 missing observations = 28		

TABLE 1

RESIDENTIAL BACKGROUND, FATHER'S OCCUPATIONAL TYPE, HIGH SCHOOL, COLLEGE AND WORK EXPERIENCES OF AGRICULTURE STUDENTS CHOOSING OCCUPATIONS IN PRODUCTION AGRICULTURE, AGRIBUSINESS AND NON-AGRICULTURAL FIELDS

Occupational Choice	High School Experiences			Work Experiences			College Experiences			Residential Background			Father's Occupational Type		
	None %	One %	Two or More %	None %	One %	Two or More %	None %	One %	Two or More %	Urban %	Rural non-farm %	Farm %	Production Agriculture %	Agribusiness %	Non-agriculture %
Production Agriculture	64.9	21.6	13.5	39.2	47.3	13.5	56.8	29.7	13.5	58.1	28.4	13.5	30.6	3.2	66.1
Agribusiness	60.3	14.3	25.4	34.9	47.6	17.5	52.4	31.7	15.9	61.9	15.9	22.2	43.5	33.9	22.6
Non-Agriculture	68.6	19.8	11.6	34.9	51.2	14.0	58.1	26.2	15.7	54.7	29.7	15.7	41.9	19.0	33.1
Total	66.0	19.1	14.9	35.9	49.5	14.6	56.6	28.2	15.2	57.0	26.5	16.5	43.2	18.8	38.0
	N = 309 4 d.f. p .05 missing observations = 51			N = 309 4 d.f. p .05 missing observations = 51			N = 309 4 d.f. p .05 missing observation = 51			N=309 Chi square = 5.588 4 d.f. sig. = .232 missing observations = 51			N=287 Chi square = 36.378 4 d.f. sig. = .0000 missing observations = 73		

TABLE 3

SUMMARY OF DISCRIMINANT ANALYSIS OF CHOICE OF COLLEGE MAJOR OF AGRICULTURE STUDENTS

Variable	Step	F to Enter or remove	Wilk's Lambda	Standardized discriminant coefficients	Sig. of change
High School experiences	1	16.7325	.90767	0.3924	.000
College experiences	2	6.14142	.87491	-0.4033	.001
Residential background	3	5.2727	.84758	-0.3054	.003
Work experiences	4	2.2678	.83595	-0.4087	.069

Discriminant functions	Eigenvalue	Canonical Correlation	Wilk's Lambda	Chi Square	Discriminant functions
1	.18379	.394	.8360	58.683	8
2	.01052	.102	.9896	3.427	3
			p .000		

Prediction Results

		Predicted Group Membership		
Actual Group	N	Group 1	Group 2	Group 3
		Percent		
Production Agriculture	75	33.3	.0	66.7
Agribusiness	45	22.2	2.2	75.6
Nonagriculture	212	8.5	.0	91.5

66.27% grouped cases correctly classified

TABLE 4

SUMMARY OF DISCRIMINANT ANALYSIS OF CHOICE OF OCCUPATION OF AGRICULTURE STUDENTS

Variable	Step	F to Enter or remove	Wilk's Lambda	Standardized discriminant coefficients	Sig. of change
Father's occupational type	1	19.62662	0.87857	.99455	.000
High School experience	2	2.06506	0.89389	.08494	.124

scriminant unction	Eigenvalue	Canonical Correlation	Wilk's Lambda	Chi Square	Discriminant function
1	.13923	.350	.8659	40.810	4
2	.01369	.116	.9865	3.854	1

p .00

Prediction Results

Actual Group	N	Predicted Group Membership Group 1	 Group 2	 Group 3
		Percent		
Production Agriculture	62	19.4	.0	80.6
Agribusiness	62	1.6	.0	98.4
Nonagriculture	163	.6	.0	99.4

60.63% grouped cases correctly classified

A Field Theory Approach For Identifying Program and Community Leadership Roles: A Case Study*

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INTRODUCTION

Since the Lynds' study of Middletown in the early 1900's, the study of community has witnessed a veritable evolution. In large part, this has been due to the surge in interest demonstrated by sociologists toward its study. The consequence of such efforts has been the development of a multiplicity of approaches to community analysis.

A major weakness of many approaches to studying the community was noted in 1951 by Jessie Bernard. She pointed out that most sociological studies of the community devote major attention to structure which results from interaction, while giving little attention to the interaction processes themselves. As an alternative, she proposed that sociologists devote greater emphasis to the dynamic interactions in community studies (Bernard, 1951:17n).

One recent approach to the study of community has community dynamics as a central notion. Referred to as "Community Field Theory," this perspective has its roots in several disciplines. For example, field as a theoretical concept was studied at some length in the scientific disciplines of physics and biology (cf. Maxwell, 1890; Bernard, 1957; Cannon, 1939; Rapaport, 1956) and played an important role in the psychology-oriented works of noted scholars such as Lewin (1951), Murphy (1947), and Yinger (1965).

Lewin (1951) first provided the major impetus for viewing field from a sociological perspective by moving from the study of "psychological space" to the study of "social space" (Sanders, 1975:363). The application of the idea of a social field to the community has been a more recent development and has gained popularity among students of community who are primarily interested in the study of dynamics and change (see Kaufman, 1959; Wilkinson, 1969; 1970a; 1970b; 1972; 1974).

Social Fields Within a Local Society

Field theorists point out that any social organization, be it a group, organization or community, can be treated as a social field. Consequently, within any given local society may be found a number of social fields. Among these are some which can be characterized as being locality-oriented. The emergence of locality-oriented social fields occurs when actions (i.e., projects, events or issues) have local residents as the principal actors and/or beneficiaries; have as the goals of the action the interests of local residents; and are public in the sense that beneficiaries of the actions include persons in addition to the actors (Wilkinson, 1970b:56-57).

A locality-oriented field may be regarded as an interest field that is differentiated from other interest fields along unique functional lines, such as education, health, government, religion and recreation. Within each interest field, individuals and organizations (i.e., actors and associations) are identified as actively pursuing the goals of the specific field. The nature of their activities are characterized as task-accomplishment oriented.

Wilkinson (1969:32-33) points out that although the multiple social fields found within a local society can be differentiated along interest lines, an empirical situation may often reveal varying degrees of overlap among interest fields, with overlaps being indicated by the existence of common actors and associations in coordinated activities. He notes that it is the awareness of this overlap which symbolizes the first step "toward conceptualizing a special kind of social field which emerges from the interest-based fields in a local society and provides varying degrees of unity among them. This we call the community field" (Wilkinson, 1969:33).

The emergence of community field is dependent upon the coordination (or integration) of interest-related activities through actors and associations in the local society. Coordination which refers to the cohesiveness or integration of the social structure, is essentially concerned with depicting how actors and associations are related to each other for the purpose of effectively carrying out actions.

Within any given interest field, actions are generally oriented toward the accomplishment of specific program tasks. Consequently, there is little effort expended to coordinate that given field with others. However, "a central proposition for community research is that over the long run sustained achievement across the board--that is, comprehensive development--requires integration and coordination among interest fields" (Wilkinson, 1969:33). This is achieved with the emergence of a community field.

Shortcoming of Social Field Theory Approach in Community Studies

Action field theorists have directed the majority of their attention to the study of the

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** Assistant Professor, Department of 4-H and the Center for Rural Development "action" and "actor" elements of community field. In so doing, they have developed criteria for describing leadership roles based upon what individuals do and accomplish. It is suggested that individuals who display considerable activity in different issues are the "persons of influence" and thus constitute the community's leadership structure (cf. Kaufman and Wilkinson, 1967; Kaufman, Singh, and Dasgupta 1975; Wilkinson, 1970b). This paper argues that though there is nothing wrong with the procedures employed to delineate leadership roles, there is an apparent failure in the field theoretical approach to move beyond this descriptive level to examine *why* individuals behave as they do in such actions.

There are many possible approaches for examining this issue. For example, attempts to explain why individuals become involved in local issues might focus upon their socio-economic status (i.e., Foskett, 1955), life-style (i.e., Greer, 1962), or age (i.e., Mayo, 1950). In our view, an alternative theoretical explanation may be found in the community power literature. Perrucci and Pilisuk (1970:1042), in their study of community power, state that persons who become involved in any given issue do so because they have access to resources of others, in addition to their own, which they are able to mobilize for the purpose of influencing the shape of a community issue. They note that one method by which individuals can draw upon the resources of others as well as their own is through executive positions in organizations. The more organizations in which an individual holds a high level position, the greater is his power, given that these overlapping positions provide him with access to each of the organization's power resources in the form of people, money, jobs, etc.

Perrucci and Pilisuk test their proposition in an examination of involvement in a past issue in a medium-sized midwestern U.S. city. Their findings support the thesis that individuals who hold a greater number of organizational ties, and thus have access to a larger resource base are more likely to be involved in a local community issue than are individuals having access to a smaller resource base. The results of a replication of the Perrucci and Pilisuk study conducted by Koch and Labovitz (1976) in a small Canadian resort town provide additional support to this thesis.[1]

Thus, with respect to community field theory, the Perrucci and Pilisuk work may provide the theoretical explanation for understanding *why* leaders are able to accomplish what they do in locality-relevant actions. Namely, a person's impact on any action(s) will be primarily a function of the amount of resources, in the form of overlapping executive positions in organizations, that he is able to mobilize and bring to bear on the action(s).

HYPOTHESES

This paper represents an extension of prior research dealing with a field theory approach. An explicit attempt is made to integrate into the field theoretical framework the concept of "access to resources" as an important dimension for increasing our understanding of the actor component of a community field. A community field approach is used to study actions having relevance to a given area. With the assistance of local knowledgeables, recent community issues and issue participants are identified. These participants are then interviewed. Additional information is collected on the organizational executive positions held by these individuals and used for classification into one of the following categories: (1) individuals who hold high level positions in three or more formal local organizations (i.e., interorganizational leaders or IOLs), (2) individuals who hold high level positions in one or two formal local organizations (i.e., organizational leaders or OLs), and (3) individuals who do not hold high level positions in formal local organizations (i.e., not an organizational leader or NOLs).

The next step involves determining the program leadership roles of individuals identified as actors (participants) in locality-relevant issues. Program leadership roles are viewed as contributions to task-accomplishment and are identified as behaviors in specific programs (or issues) having locality-relevance. Behavioral contributions are sorted by the action phases to which each behavior is relevant.

Intensity of participation is used to measure actors' program leadership roles, which reflects the number of program action phases each actor is involved in. Thus, the greater the intensity of participation, the greater the contribution to the accomplishment of program tasks. Consequently, the first hypothesis that we will test is stated as follows:

Hyp. 1 Interorganizational leaders provide greater contributions to the accomplishments of program tasks, manifested in terms of intensity of participation, than do organizational leaders and individuals with no organizational executive ties.

An additional objective is to examine the community leadership roles of individuals identified as actors in locality-relevant issues. Community leadership roles can be defined as contributions to structure development and can be determined by the configuration of the following indices: the community relatedness of different interest fields in which issues take place and roles performed by actors; the actor's influence in each interest field; and the scope of the actor's community role, indicated by the number of different interest fields in which roles are performed and the qualitative variety of those roles performed by the actor in the interest fields. Accordingly, the second hypothesis to be treated in this study is:

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[1] Although Perrucci and Pilisuk highlight the importance of resources for explaining involvement in local issues or actions, they fail to consider the "dynamic process" which is of crucial concern in the field theoretical approach. That is, involvement is never viewed in terms of the different phases of an issue in which participation takes place.

Hyp. 2. Interorganizational leaders provide greater contributions to community-structure building, manifested in terms of scope of involvement, than do organizational leaders and individuals with no organizational executive ties.

METHODOLOGY

The setting for this study is a small rural community in Indiana known as Delphi. Delphi is the largest incorporated area in the county and has a population of approximately 2,700 persons.

Identifying Issues and Participants

To identify the issues in Delphi, we adopted the procedures employed by Freeman et al. (1968) in their study of leadership patterns in Syracuse, New York. First, three individuals were interviewed as "specialists." Each was asked to generate names of persons whom he felt were cognizant of the issues which had taken place in the community over the 1973-76 time period. The nine individuals who received a nomination from at least two of the three persons were labeled "informants." The eight informants who agreed to be interviewed were asked to describe local issues which had been in evidence in Delphi over the 1973-76 time period.

Altogether, seven issues were generated. Those receiving a minimum of three nominations were considered for further study; five of the seven issues met this criterion. The nature of these issues were then carefully examined and subsequently screened on the basis of their locality-oriented characteristics. This produced a final list of four issues: canal restoration, renovating courthouse square, attracting new industry and low-cost housing.

Next, participants in each of the four loclity-oriented issues were identified. The method employed represented minor variations of the one developed by Freeman et al. (1968:14-33). First formal authorities for each of the issues were identified. Formal authorities were defined as persons who were in some way legally responsible for the issue. Identification was made primarily on the basis of discussion with local residents. Of the twenty-seven individuals identified as authorities, twenty-five (92.6%) agreed to be interviewed.

In the "issue" section of the interview schedule, respondents (in this case, authorities) were presented with four 3 x 5 index cards, each listing a locality-relevant issue. Each authority was asked to indicate the issues he had been involved in. For each issue that participation was indicated, the authority was asked: "From your point of view, who were the individuals in the community who were most involved in this project besides yourself?" An appeal was made for nominations of participants on the basis of first-hand knowledge. Persons who were designated as participants in a specific program of action by two or more authorities were labeled first-level influentials.

First-level influentials were contacted by telephone for the purpose of arranging an interview. Those agreeing to participate were interviewed using the same questionnaire as that employed for authorities. Within the "issue" portion of our interview, the respondents were asked to indicate issues they actively took part in, and to list for each of these issues the names of other participants.

Persons nominated by one authority and one first-level influential for a given issue were also designated first-level influentials for that issue, and were subsequently interviewed. The same procedures noted above were employed in these interviews. The final tally showed that thirty-four individuals were identified as first-level influentials, of which twenty-nine (83.3%) were successfully interviewed. [2]

In a second portion of our interview, individuals who had indicated participation were asked to describe all the actions they had taken with respect to the specific issue(s) they were involved in. Each reported instance of behavior within a given issue was recorded on a 3 X 5 index card and subsequently classified by the phase of action to which the behavior was most relevant. A fivefold action model developed by Wilkinson (1970b:60-64) was utilized for the purpose of sorting activities of actors. These action phases are: initiation, organization of sponsorship, decision-making, recruitment, and implementation.

Determining Organizational Executive Positions of Participants

Two distinct methodologies were used for determining who interorganizational and organizational leaders were. The first, developed by Perrucci and Pilisuk (1970), consisted of a detailed procedure for compiling a conprehensive list of IOLs and OLs in the county in which Delphi is located. Though the information collected was clearly more than what was needed for this study, it did prove to be essential for a more comprehensive project from which this study evolved. The procedures of the methodology were threefold. First, a list of all organizations in the county with ten or more employees was compiled. Additionally, all law firms were included on the organization list. This exception was made on the basis of the argument advanced by Perrucci and Pilisuk (1970:1045) that law firms constitute an important link between organizations and, therefore, should be included as an organization regardless of size.

The second step involved securing names of all executives in the organization identified above during the time period 1973-76. In the case of business and industrial organizations, executives were identified as being the officers (i.e., president, vice-president, secretary, treasurer) and board of directors of each respective organization. With regard to church organizations, executives were identified as those individuals who made up the church's governing board (or its comparable decision-making group).

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[2] It should be pointed out, however, that twenty of the twenty-nine first-level influentials had already been interviewed as authorities in some issue(s). Therefore, only nine additional individuals needed to be interviewed.

As a final step, the total number of high level executive positions held by each leader was determined. Of the 753 organization leaders identified, 83.3 percent held a high level position in only one organization; .9 percent held high office in four or more organizations. Based upon the results, interorganizational leaders were designated as individuals who held high level positions in three or more organizations (n=30), and organizational leaders were those persons who held a high level position in one or two organizations (n=723).

A classification of the participants into one of these two categories simply required a search of the IOL-OL list. Participants whose name appeared under the IOL list were appropriately labeled "IOLs." If a participant's name was listed under the OL list, he was labeled an "OL." Any participant whose name appeared under neither list was classified as "NOL."

A second methodology was used to supplement the original "IOL-OL" list with information that had been collected in interviews with participants in the locality-oriented issues. In these interviews, the participants were asked to indicate which organizations they had served as officers or members of the board of directors. In reviewing these interviews, we observed that some participants had held executive positions in organizations that were not among the initial list of organizations. Consequently, all executive positions not previously accounted for were taken into consideration when determining the participant's organizational leadership status. Including the supplemental data, the results indicated that the original list of IOLs and OLs remained largely intact. The only exceptions were six OLs who became IOLs on the basis of the additional information. Thus, the final classification showed 36 individuals as IOLs and 717 as OLs.

Program and Community Leadership Roles: Operational Measures

The operational measures employed in this study are adopted primarily from the works of Wilkinson (1974) and Kaufman, Singh and Dasgupta (1975). A brief explanation of the measures for determining program and community leadership roles is needed. Program leadership roles are viewed as contributions to task-accomplishment, manifested in behaviors or actors within specific issues. The index used to measure program leadership roles has been referred to as intensity of participation to reflect the actor's degree of involvement in locality-oriented issues, with degree of involvement referring to the number of action phases within which the individuals display participation.

Community leadership roles are seen as contributions to structure development and are determined by the configuration of issue roles played by an actor in different interest fields. This "configuration" is manifested in the person's scope of involvement, which consist of the following important indicators: the community relatedness of different interest fields in which issues take place; the individual's influence in each interest field; and the scope of the actor's community role indicated by the number of different interest fields in which roles are played, and the qualitative variety of roles performed by the actor in the interest fields.

Community relatedness is a measure of the average number of linkages a given interest field has with other interest fields in which locality-oriented issues have taken place. Operationally, the researcher begins by classifying each locality-oriented issue within a local society by its interest field. Next, the researcher determines the number of linkages a given interest field has with other interest fields through common actors in the issues. Once this is achieved, the researcher divides the total linkages a given interest field has with other fields by the total number of other fields. This produces a score which reflects the average number of linkages that interest field has with other fields in which locality-oriented issues have taken place.

The actor's influence in each interest field represents the second indicator of scope of involvement, and is used to reflect the number of phases in which roles were performed by the individual in an issue(s) identified as being of a given interest field.

A degree of similarity does exist between the actor's influence in each interest field and the intensity of participation measure discussed earlier. A conceptual distinction does, however, exist. The intensity of participation measure examines the actor's phase involvement in each locality-oriented issue in which he participates, whereas the present indicator examines the participant's phase involvement in issues within given interest fields.

A quantitative index of an actor's total interest field influence is created by combining the measure of the actor's influence in a given interest field with the community relatedness of that field. The assumption is made that contributions to structure building are performed by actors having considerable phase involvement in interest fields with high community relatedness.

To determine an actor's total interest field influence score, the actor's influence score in a given interest field is multiplied by the community relatedness of that field. This procedure is repeated for every interest field where involvement was found. The results are summed across interest fields in which he participated, thus, indicating the actor's total interest field influence score.

The final indicator, scope of the actor's community role, is made up of two components: the number of different interest fields in which roles were played and the qualitative variety of roles performed by the actor in the interest fields. The former is measured by differentiating the four locality-oriented issues by interest fields and determining the number of different interest fields in which roles were performed by the actor.[3] The latter is measured by the number of different phases the actor displayed activity in, regardless of the number of action programs of different fields in which a given phase-role was played. Given that we employed a five-phase action model in this study, the maximum number of distinct phase-roles that could be played is five.

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[3] The interest areas of the respective locality-oriented issues are: canal restoration = recreation and the arts; renovating courthouse square = community-wide, multi-interest activity; attracting new industry = industry and trade; low-cost housing = housing.

The range of the actors' community leadership roles results when a composite of the total interest field influence and scope of community role indicators is developed. Generalized actors are operationally defined as persons in two or more interest fields who performed two or more different phase-roles, and single-phase actors are individuals in two or more interest fields who performed a single phase-role. Persons who performed two or more phase-roles in a single interest field are labeled single-interest actors , while those performing a single phase-role in a single interest field are defined as single-phase and interest actors. Within each role scope category, actors are further classified by levels of interest field influence scores.

Community leadership roles are primarily carried out by individuals classified as generalized and single-phase actors since their involvement serves to link various interest areas in the field. Generalized actors provide the basic structure of the community field since they not only connect different interest fields but also perform qualitatively distinct phase-roles across fields. Within this category, the high influential actors provide the greatest contributions to structure-development, followed by actors medium and low in total interest field influence. Single-phase actors, although contributing to interfield connectedness, perform only single qualitatively distinct phase-roles in these fields and, therefore, become known as "phase specialists."

Community leadership roles of a lesser degree are performed by individuals classified as single-interest or single-phase and interest actors. They contribute less to the structure of the community since their behavioral contributions do not link interest fields. Single-interest actors perform qualitatively distinct phase-roles within a single interest field and are often referred to as "subject-matter specialists." Minimal contribution to structure development is therefore provided by single-phase and interest actors.

ANALYSIS AND FINDINGS

It was previously noted that 34 individuals took part in this study. However, two individuals previously identified as authorities did not indicate involvement in any of the four issues. Consequently, 32 persons were delineated as participants in one or more of the community issues. Using the compiled list of organization leaders, the 32 participants were classified into one of the following categories: (1) IOLs, i.e., individuals who hold leadership positions in at least three formal organizations; (2) OLs, i.e., individuals who hold leadership positions in one or two formal organizations; and (3) NOLs, i.e., individuals who do not hold leadership positions in any formal organization. Altogether, 15 participants were classified as IOLs and 16 as OLs, with the remaining individual holding no such position. Since but one participant was classified in the NOL category, the decision was made to limit the analysis to a comparison of the two leadership categories. One point worth noting is the fact that only one person classified as NOL was actively involved in any of the four issues. This strongly suggests the importance of organizational executive ties in predicting participation in locality-oriented issues.

Program Leadership Roles

As noted earlier, program roles in locality-relevent issues are viewed as contributions to task-accomplishment and, accordingly, can be identified on the basis of behavior within specific issues. To articulate program leadership roles, a classification of the actors' reported behavioral contributions in each issue by action phases is made to determine intensity of participation.

The intensity of participation index reflects the number of program phases the IOL and OL actors were involved (See Table 1). The intensity of participation scores for the two groups were converted into mean phase involvement scores by dividing the total number of phases where participation occurred by the number of individuals participating in the issue.

In the four locality-oriented issues in Delphi, the mean phase involvement of IOLs was greater regardless of the issue in question. Overall, the 15 IOLs had an average mean phase involvement score of 2.52 whereas OLs had an average mean score of 1.41. A test of the difference between the means indicated that they were significantly different at the .01 level.

The first hypothesis states that program leadership roles are in part determined by the nature of their organizational leadership status. That is, IOLs are expected to provide greater contributions to program task-accomplishment than OLs. The results in Table 1 tend to support this hypothesis.

In order to identify the relative contributions of specific variables for explaining an actor's program leadership role, multiple regression analysis was adopted.[4] The actor's average intensity score was devised to reflect his program role. This index was derived by summing the number of phases of each issue he was involved in and dividing that sum by the number of issues in which roles were performed. For example, if an actor was involved in three issues and provided behavioral contributions to three phases of each issue, his average intensity of participation score would be 9/3 = 3.

Organizational leadership status was included in the equation on the basis of its

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[4] See appendix for the zero-order correlation matrix of the variables entered into the regression equation.

Table 1. Intensity of Participation of IOLs and OLs in the Four Locality-Oriented Issues in Delphi.

	Number Involved	Total Number of Phases	Mean Phase Involvement
Canal Restoration			
IOL	3	8	2.67
OL	4	6	1.50
Renovating Courthouse Square			
IOL	5	11	2.20
OL	10	13	1.30
Attracting New Industry			
IOL	3	5	1.67
OL	2	3	1.50
Low-cost Housing			
IOL	10	30	3.00
OL	4	7	1.75

Total

	Number Involved	Average Mean Phase Involvement	F-Value	Sig.
IOL	15	2.52	9.10	$p < .01$
OL	16	1.41		

Table 2. Regression of Average Intensity of Participation of Actors in Delphi Issues on Selected Personal Characteristics.

Dependent Variable (Y)	Independent Variable (X_i)	Unstandardized Partial Regression Coefficient (b_i)	Standardized Partial Regression Coefficient (B_i)
Average intensity of participation score	Organizational leadership status 6/	1.090	.479**
	Age	-.017	-.171
	Education 7/	.028	.037
	Net annual income 8/	-.015	-.024
	No. of nominations as reputational leader	.044	.145
	(Constant)	4.295	----
		R = .529	
		R^2 = .279	$p < .10$

$^{**}p < .05$

6/ 1= OL; 2= IOL

7/ 1= less than high school; 2= high school; 3= some college; 4= four-year college; 5= some graduate work; 6= received post-graduate degree

8/ 1= less than \$3,000; 2= \$3,000 - 4,999; 3= \$5,000 - 6,999; 4= \$7,000 - 8,999; 5= \$9,000 - 11,999; 6= \$12,000 - 14,999; 7= \$15,000 - 19,999; 8= \$20,000 - 24,999; 9= \$25,000 or more.

theoretical importance to this study. The socio-economic characteristics of age, education and net annual income were introduced into the regression on the basis of prior research. Mayo (1950), Foskett (1955) and Schuyler (1959), for example, note the important effect of age on participation rates. Reissman (1954), Mather (1941) and Scott (1957) indicate that education and income contribute significantly to membership and participation in voluntary associations.[5]

During the structured interviews, participants were asked the following question: "Please name 10 people who you feel have been most influential in initiating, supporting and shaping policy decisions which have the most effect on the community as a whole." Community power and leadership studies often use this procedure to identify reputational leaders in a community. The number of nominations that each participant received was included as an independent variable in our regression equation. Aiken and Mott (1970) have documented the high association often found between number of nominations as a reputational leader and participation in local issues.

Table 2 presents the results of the regression analysis. As hypothesized, IOLs show greater average intensity of involvement than OLs. Their average phase involvement per issue is 1.09 more than the average for OLs. The importance of the organizational leadership status variable is made evident by the fact that this variable by itself accounts for 24% of the total variance in the dependent variable. The amount of variance in the dependent variable explained by organizational leadership status when R^2 is adjusted is 21.3% No significant effect on intensity of participation is shown by the other independent variables.

Thus, the results of the regression analysis indicate that, consistent with our first hypothesis, IOLs contributed significantly more to the accomplishment of program tasks in Delphi issues than OLs. This strong effect remained even when controlling for other independent variables in the regression equation.

Community Leadership Roles

Community leadership roles are seen to contribute to structure development and are determined by the configuration of roles performed by an actor in different locality-relevant fields. The role configuration indicator, namely, scope of involvement, is made up of three key components. These include: the community relatedness of different interest fields in which locality-oriented issues are found; the actor's influence in each interest field, and the actor's community role scope. This latter component refers to both the number of different interest fields the actor contributes behavior to, and the number of qualitatively distinct phase-roles he performs across interest fields.

Community relatedness measures the average number of links a given interest field has with other interest fields within which locality-oriented issues are found. The community relatedness score of the interest fields represented in this study are: recreation and the arts = 2.0; community-wide, multi-interest = 1.7; industry and trade = 1.7; and housing = 2.7. For purposes of calculating a forthcoming composite score, we defined all Delphi interest fields as "low" on community relatedness, and assigned them a weight of "1".

The second component of scope of involvement is the actor's influence in each interest field. This is measured by determining the number of action phases within a given interest field that roles are performed by the individual. It is, therefore, assumed that the more phases in which behavioral contributions are made by an actor, the greater his influence in that interest field.

A quantitative index of an actor's total interest field influence score was created next. This involved combining the measure of the actor's influence in a given interest field with the community relatedness of that field. The assumption is made that contributions to structure building are performed by actors having considerable phase involvement in interest fields with high community relatedness. The range of total interest field influence scores was 1 - 9 for participants in Delphi issues. A further classification of participants was determined as follows: actors with scores of four or less as "low" in total interest field influence; actors with scores of 5 - 10 as "medium." No actors in Delphi were judged to be "high" on total interest field influence (a score of eleven or more).

The third indicator of community leadership role is the scope of the actor's community role. It consists of two important components: the number of different interest fields in which participation occurred, and the qualititative variety of phase-roles performed in the interest fields. The former is measured by determining the number of different interest fields in which behavioral contributions are made by an actor. The latter is measured by the number of different phases the actor displays activity in, regardless of the number of different interest fields in which a given phase-role is played.

Table 3 represents a composite of the indices we have just discussed. It gives in raw form the range of the actors' leadership roles in Delphi. The two components of community role scope are represented by the second and third sections of the table (i.e., variety of phase-roles and number of interest fields). The quantitative index of total interest field influence score is found in the first section of the table.

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[5] Length of residence and number of organizational memberships, which have been found to be associated with participation, were originally included in the regression analysis. However, we were forced to delete these variables from the equation given length of residence's high correlation with age (r = .560) and number of organizational memberships' high association with organizational leadership status (r = .559). Failure to remove them from the equation would have increased the chances of a multicollinearity problem in our regression analysis (see Blalock, 1972:463-464, for a discussion of the problem of multicollinearity).

Table 3. Distribution of Actors in Delphi by Total Interest Field Influence Scores, Qualitative Variety of Phase-Roles Performed, and Number of Interest Fields in Which Involved.

Total Interest Field Influence Score	Variety of Phase-Roles	Number of Interest Fields			Total
		1	2	3	
Low (1-4)	1	13	2	0	15
	2-3	7	0	1	8
	4-5	2	0	0	2
	Total	22	2	1	25
Medium (5-10)	1	0	0	0	0
	2-3	0	1	0	1
	4-5	1	3	1	5
	Total	1	4	1	6
High (11 or more)	1	0	0	0	0
	2-3	0	0	0	0
	4-5	0	0	0	0
	Total	0	0	0	0

Table 4. Distribution of Community Leadership Role Types in Delphi.

Leadership Role Types	Delphi	
	Number	Percent of Total
Generalized		
Medium Influence	5	16.1
Low Influence	1	3.2
Single-Phase		
Low Influence	2	6.5
Single-Interest		
Medium Influence	1	3.2
Low Influence	9	29.0
Single-Phase and Interest		
Low Influence	13	42.0
Total	31	100.0

Table 5. Regression of Type of Leadership Role Performed By Actors in Delphi on Selected Personal Characteristics.

Dependent Variable (Y)	Independent Variables (X_i)	Unstandardized Partial Regression Coefficients (b_i)	Standardized Partial Regression Coefficients (B_i)
Type of leadership	Organizational leadership status	1.152	.263*
	Net annual income	.215	.187
	No. of nominations as reputational leader	.288	.489***
	Age	- .013	- .071
	Education	.079	.055
	(constant)	2.227	--

$R = .581$

$R^2 = .337$ $p < .10$

* $p < .10$

*** $p < .01$

Individuals "high" in total interest field influence who also perform multiple but distinct phase-roles in several interest fields contribute the most to structure-building. No such actors were found in Delphi. On the other hand, individuals "low" in total interest field influence who perform a single qualitatively distinct phase-role in a single interest field contribute least to community structure-building. Thirteen actors in Delphi were so identified.

A classification of the three levels of interest field influence scores (Table 4) are broken down in Table 5 according to the participants' role scope. Again, scope of community role is represented by the number of interest fields in which roles were performed, and the qualitative variety of phase-roles played.

Table 5 shows that six actors provided the basic structure of the community field in Of the six, none were identified as highly influential generalized actors. It is these individuals who make the most diffuse contributions to interfield connectedness. Less diffuse but nevertheless important contributions to community structure-building were made by five generalized actors of medium influence and one generalized actor of low influence. As for single-phase actors, two were identified as having low influence and thus, performed specialized community leadership roles.

Of the actors who performed community leadership roles of a smaller nature, 10 took part in qualitatively distinct phase-roles in a single interest area. Only one of the 10 was medium and nine were low in influence. Thirteen single-phase and interest actors were found in Delphi. Their roles represented minimal behavioral contribution to structure development.

The various types of leadership roles presented in Table 5 are assumed to form an ordinal scale of behavioral contributions to structure development. However, in order to examine the relative contribution of organizational leadership status and other specific variables to the type of leadership role performed in Delphi (using multiple regression analysis), weights were assigned to each leadership role type presented in Table 5. Generalized actors with medium influence were assigned a weight of "6"; generalized actors with low influence a weight of "5", etc. until the last leadership role type, namely, single-phase and interest actors, was given a weight of "1". Results of the regression analysis are noted in Table 5.

The positive b-value for organizational leadership status indicates that IOLs in Delphi provided greater contributions to structural development than OLs. Greater contributions were also provided by individuals who received a greater number of nominations as reputational leaders. Total variance explained by the variables in the equation was 33.7 percent.

A second regression analysis was undertaken with only the two significant variables in Table 6 (organizational leadership status and no. of nominations as reputational leader) included as independent variables. The amount of variance in the dependent variable (type of community leadership role performed) accounted for by these two variables was 28.6 percent. Moreover, even when R^2 was adjusted (or corrected), the variance explained was 23.5%.

In sum, the results of the analysis point out that, as suggested in the second hypothesis, IOLs contributed more to structure-building than OLs. In addition, actors more often viewed as reputational leaders contributed more to the development of structure in Delphi in comparison to those receiving fewer nominations.

DISCUSSION

The theoretical argument that "access to resources" in the form of overlapping executive ties in local formal organizations is central to our understanding of why actors accomplish what they do in local issues is supported by the findings in Delphi. IOLs contribute more than OLs to both program task-accomplishment and community structure-building in this locality.

In our view, the findings of this study may well have something to offer to change agents involved in community development efforts. As Warren (1973:329-330) notes, two themes have come to be associated with community development. The first, which emphasizes the improvement of material conditions within a community, is basically task-accomplishment oriented in nature. The second, which emphasizes the strengthening of the pattern of relationships among actors who seek to collectively solve the problems of their community, is oriented to community structure-building.

Field theory, with its obvious interest in both task-accomplishment and structure development, is especially relevant to community development. If anything, it provides change agents involved in development efforts with a theoretical framework within which to orient their practice. More than this, however, we believe that studies conducted in the field theory tradition serve to provide change agents with guidelines that can facilitate their development efforts.

On the basis of our findings, we propose that change agents actively seek to involve interorgainzational leaders in development efforts at the community level. Be it task-accomplishment or structure-building, IOLs contribute significantly to both at this level. On a related matter, the Cooperative Extension Service has often advocated the use of the reputational approach as the mechanism for enabling change agents to identify individuals who can best assist in community development efforts. While some have been quite critical of this approach the results of our analysis in Delphi lend support to the utility of recruiting reputed leaders for development efforts at the community level. Significant contributions to structure-building in Delphi are provided by actors receiving the largest number of nominations as reputational leaders.

LIST OF REFERENCES

Bernard, Claude
1957 An Introduction to the Study of Experimental Medicine, translated by Henry D. Green, New York: Dover Publications.

Bernard, Jessie
1951 Some social-psychological aspects of community study: some areas comparatively neglected by American sociologists, British Journal of Sociology, 12-30.

Blalock, Hubert M. Jr.
1972 Social Statistics, New York: McGraw-Hill Book Company.

Cannon, Walter B.
1939 The Wisdom of the Body. New York: W. W. Norton and Company.

Foskett, John M.
1955 Social structure and social participation, American Sociological Review, XX, (August) 433-436.

Freeman, Linton C., et al.
1968 Patterns of Local Leadership. Indianapolis: Bobbs-Merrill

Greer, Scott
1962 The Emerging City: Myth and Reality, New York: The Free Press.

Kaufman, Harold F.
1959 Toward an interactional conception of community, Social Forces 38 (October), 8-17.

Kaufman, Harold F., Avtar Singh, and Satadal Dasgupta
1975 Villages Upward Bound, Calcutta: Editions Indian.

Kaufman, Harold F. and Kenneth Wilkinson
1967 Community Structure and Leadership: An Interactional Perspective in the Study of Community, Mississippi State University. Social Science Research Center Bulletin No. 13.

Koch, Agnes and Sanford Labovitz
1976 Interorganizational power in a Canadian community: a replication, The Sociological Quarterly (Winter) 3-15.

Lewin, Kurt
1951 Field Theory in Social Science. New York: Harper and Brothers.

Lynd, Robert S. and Helen M. Lynd
1929 Middletown. New York: Harcourt, Brace, and Jovanovich.
1937 Middletwon in Transition. New York: Harcourt, Brace and Jovanovich.

Mather, William G.
1941 Income and social participation. American Sociological Review, 6:380-83.

Maxwell, James C.
1890 The Scientific Papers of James Clark Maxwell, edited by Sir William Davidson Kiven. New York: Dover Publications.

Mayo, Selz C.
1950 Age profiles of social participation in rural areas of Wake County, North Carolina, Rural Sociology, XV (September) 242-251.

Murphy, Gardner
1947 Personality: A Biosocial Approach to Origins and Structure, New York: Harper and Brothers.

Perrucci, Robert and Mark Pilisuk
1970 Leaders and ruling elites: the interorganizational bases of community power, American Sociological Review (December), 1040-1057.

Rapaport, Anatol
1956 Homeostasis reconsidered, in Roy R. Ginker (ed.), Toward A Unified Theory of Human Behavior, New York: Basic Books.

Reissman, Leonard
1954 Class, leisure and social participation. American Sociological Review, 19:76-84.

Sanders, Irwin T.
1975 The Community, 3rd edition, New York: The Ronald Press.

Schuyler, Joseph
1959 Religious observance differentials by age and sex in Northern Parish. American Catholic Sociological Review, 20(2):124-31.

Scott, John C., Jr.
1957 Membership and participation in voluntary associations. American Sociological Review, 22:315-26.

Warren, Roland L.
1973 The Community in America, Chicago: Rand McNally and Company, Second edition.

Wilkinson, Kenneth P.
1969 Special agency program accomplishment and community action styles: the case of watershed development, Rural Sociology, (March), 29-42.
1970a The community as a social field, Social Forces 48 (March), 311-22.
1970b Phases and roles in community action, Rural Sociology 35, (March), 54-68.
1972 A field-theory perspective for community development research, Rural Sociology 37, (March) 43-52.
1974 A behavioral approach to measurement and analysis of community field structure, Rural Sociology, 39, (Summer) 247-56.

Yinger, J. Milton
1965 Toward a Field Theory of Behavior, New York: McGraw-Hill Book Company.

APPENDIX

Table . Zero-order correlation matrix of selected characteristics of actors in Delphi locality-relevant issues.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Average intensity of participation score	---	NA	.489	-.185	.168	.113	.070
(2) Type of community leadership role performed		---	.290	-.063	-.008	.244	.433
(3) Organizational leadership status (1=OL; 2=IOL)			---	-.075	-.243	.185	-.054
(4) Age				---	-.402	-.291	.213
(5) Education					---	.105	-.358
(6) Net annual income						---	-.037
(7) Number of nominations as reputational leader							---

NA - Not applicable

A Concept of Impact Programming

by

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Introduction

Many of today's educators, especially those involved in informal kinds of education, talk about conducting and evaluating impact programs. It appears that this concept may be especially pleasing to the administrator and policymaker during a period of time when accountability is in vogue. That is, when organizations are expected to show significant results for the resources they have expended or are in charge of expending.

Some of the literature reveals assumptions that suggest that developing and evaluating impact educational programs is much different than for routine kinds of educational programs. We would argue that, although there are some significant differences, many of the principles of educational program devleopment are the same for impact and routine educational work. Some of the differences in these two programming approaches are in degree and intensity only. This paper shall attempt to discuss a concept of impact programming with emphasis on Extension.

Review of Literature

A search of the literature reveals that the body of knowledge is somewhat limited. The concept of impact, major, or comprehensive Extension programming is being implemented with varying degrees of intensity and meaning in different states.[1]

Wisconsin has dealt with this concept from a research, teaching, and Extension perspective. Extension has implemented the concept under the term "major project work" on a pilot basis with counties throughout the state of Wisconsin.

Cooperative Extension at the Institute of Food and Agricultural Sciences at the University of Florida is currently involved with the impact programming concept with soybeans in a four-county area in West Florida, with beef and forage in a 20-county area in South Central Florida and a home economics project in a seven-county area in the Panhandle area of Florida

The Alabama Cooperative Extension Service has developed documents which appear to be policy statements and which give direction to implementing educational programs that are to have a significant impact by the year 1980. Alabama's impact programs cut across Agriculture and Natural Resources, 4-H Youth, Home Economics, and Community Resource Development.

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[1] Extension Services in Florida, Wisconsin, Virginia, Alabama

Project 1700, a thrust program designed by the Dairy Science Department and County Extension faculty at Virginia Polytechnic Institute and State University, is a major effort to increase milk production by 1700 pounds in six years.

Extension at the federal level gives support to this notion. Bennett (1976) provides a model for analyzing the impact of Extension programs. The principles involved in this model are applicable to the evaluation of any impact or routine Extension program.

The literature indicates a wide difference among Cooperative Extension organizations as to the concept they hold of impact programming. Some state Extension organizations appear to focus many learning experiences on problems associated with specific clientele. Other Extension organizations seem to scatter their efforts over several problem areas among many clientele groups. Others seem to use documents with impact titles as guides or policy statements to Extension programming.

Assumptions

The underlying assumptions are really what leads to the difference between routine and impact programs.

Large amounts of change: Extension educators expect large amounts of change or significant contribution toward the solution of the problem. Admittedly, Extension generally expects change to take place with routine programs, but much more change is expected with impact programs.

Relatively short period of time: The length of time to accomplish the task is assumed to be relatively short and fairly clearly defined. That is, from several months to a few years. Extension's faculty in Virginia expect to accomplish Project 1700 in six years. The West Florida Soybean Impact Team has established four years as the time frame to increase yields by 20 percent.

Complex problems: It is assumed that the problem(s) is complex. One in which little or no success has been achieved through ordinary programming methods (a concept of Concentrated Impact Programming in Wisconsin Agriculture).

Large number affected: To bring about significant change, we assume the problem to be associated with a group or a rather large number of people. A good example of this is the Expanded Food and Nutrtion Education Program.

Conceptual Framework

Planning for Impact Programs

Work from the socal sciences idicates that effort expended by a group of people is generally considered to be superior to effort expended by individuals in problem solving (Lorge, 1958). Theoretically, the performance of an individual Extension agent working in a group is considered more effective than the performance of the same individual working alone.

A group is likely to perform particularly well when it can divide a task among its members. Solutions to most major problems are multidisciplinary to the extent that they require a division of labor. Barnlund (1963) demonstrated that groups can achieve efficiency beyond the ability of their most capable members of a complex task. A high level of interest and motivation are important as one works toward solving complex problems. Work done by Collins and Guetzkow (1964) indicates that group members socially motivate each other.

We have made the assumption that impact programming deals with complex problems. Research indicates that groups are more effective than individuals in solving complex tasks. Curriculum development specialists like the notion of a variety of people concentrating on a problem. That is, the resources of lay leadership, industry and commerce, Extension and research are marshalled and brough to bear on the problem. Therefore, we conclude that a multidisciplinary team is a very important ingredient of impact programming.

Organizing Learning Experiences for Impact Programming

To the authors' knowledge there is no evidence concerning the specific number of experiences necessary to learn to solve a complex problem. Reasoning suggests that the number of experiences needed are in proportion to the complexity of that being learned. Principles of learning theory and curriculum development imply that more than one learning experience is desirable. Tyler (1957) emphasizes the prinicples of continuity, sequence, and integration of learning experiences. Stimulus-response theory supports the notion of frequency of repetition. Cognitive theories of learning emphasize the organization of that which is to be learned from the simple to the more complex. Based on these principles of learning theory (Knowles, 1973, p. 51) and curriculum development, we conclude that several educational experiences are desirable when solving complex problems. It is assumed that impact programming will bring a change in behavior Dissonance theory adds support to the notion that learning experiences will be comprehensive to the extent that they do more than increase awareness and change attitudes. The theory holds that people try to make their attitudes and behavior consistent. This suggests that Extension programs must be comprehensive enough to change attitudes as well as providing the learner with enough new skills and knowledge to enable him to adopt a new behavior, otherwise the learner is forced to maintain the old behavior and therefore keeps his attitude and behavior consistent. The findings of Rokeach (1970, pp. 97-111) support this theory. His work revealed that members of a low socioeconomic group have many values and attitudes similar to those of middle and upper socioeconomic groups, but if they do not have the skills and knowledge to achieve behavior consistent with their attitudes, they place low priority on these values. Festinger (1964) summarizes the results of research in which a change in attitude toward an innovation occurred for many respondents, but the attitude change did not result in behavioral change.

Adoption theory implies that cational events and activities must be comprehensive to the extent that they provide the individual with enough new skills and knowledge to be able to go through a mental process of decision-making to fully accept or reject the use of a new idea. Drawing on learning, dissonance, adoption theory and curriculum development, we feel that a comprehensive educational program is important to the solution of complex problems and thus, an important part of an impact program.

Leading Extension Authorities and Impact Programming

An impact program is expected to produce significant change. Leading authorities in the field of Extension education support the notion of bringing about rapid change with the target audiences. Extension's document, A People and a Spirit (1968), expresses the notion for creating impact on certain areas of society. For example, the section on quality of living suggests that priority clientele should be the disadvantaged and the young married. This suggests that impact programs be developed for these two segments of society. Mosher (1958, p. 64) indicates that if Extension is to be effective in education and in helping people change, it must concentrate on a limited number of programs.

Justification

An Extension educator must ask "What is the justification for conducting a so-called impact program?" There must be more than just a philisophy of the organization to conduct impact programs--there needs to be other reasons.

Gap or need: Leagans (1964) talks about a need being a gap between what is and what could be. We feel there must be a large gap to justify impact programming. Virginia's Dairy Science Department pointed out that milk production per cow averages 1700 pounds below what could reasonable be expected. Thus, a large gap between what is and what could be exists.

Certain political, economic, and environmental conditions may be justification for making intensive efforts to accomplish a task in a rather specific time period. For example, the new local government may be quite favorable to developing community improvement facilities that other administrations had not looked on with favor. The economic situation, both good and bad, may dictate an impact program. Natural and man-made disasters are prime targets for impact programs.

In Extension it seems that some program areas have more problems than others. The beef program area in Florida seems to have significantly more problems than other areas, and is, thus, subject to intensive educational programming.

When the same major problem cuts across several program areas, it implies the need for impact work. For example, in Florida the problem, "plant nutrition" is identified in field crops, vegetables, citrus and ornamental horticulture, which implies the need for intensive educational work concerning plant nutrition.

Available technology: There must be a body of knowledge available concerning a problem or Extension cannot justify an impact program. However, many Extension people seem to want new research information when they really have not built what is already known into an educational program.

Improved quality of living: Probably, the bottom line in justification for an impact program is whether the quality of life is significantly improved for specific clientele and for people in general. For example, will the quality of life significantly improve for diary farmers in Virginia who are involved in Project 1700? If so, the program can be justified.

Components

The most important components of an impact program are (1) identification of the specific target audience, (2) delineation of priority problems, (3) the development and implementation of a comprehensive educational program, (4) multidisciplinary team of human resources, (5) clearly defined goals, and (6) evaluation.

Specific target audience: Since resources are always limited, the more groups and problems involved, the less concentration can be given to any one. Therefore, part of the philisophy of an impact program is to concentrated resources on few clientele groups and problems. Usually, the concern is not for different clientele groups with the same problem, but expending the educational program on groups who do not have the problem. Analysis of county plans of work in Florida reveals that agents generally have difficulty in identifying the specific target audience. Evaluations of county Extension programming also indicate that some agents have difficulty in directing the education program to target audience. Research work (Taylor, 1975, p. 78) indicates that agents' concept of the number of different clientele groups and the number of different problems they must work with to effect an impact program varies. About half of those who developed impact programs thought that the educational experiences should be focused on one group only. The other half had identified two or more groups they were working with. Neither concept is wrong, but what is important is that the educator understands that the scope and nature of the problem has much to do with the number of groups of the target audiences and that the educational program must be focused on the group(s) with the problem. Plant nutrition is a serious problem with both citrus and vegetable producers in Florida. Project 1700 in Virginia indicates that low milk production is a problem for dairymen only.

Delineation of specific problems: Research (Taylor, 1975, p. 79) indicates that the number of problems identified within a program area is associated with the comprehensiveness of the learning experiences conducted. Agents involved in the above research who identified two or more problems with the same program area were more likely to develop major or impact type educational programs. There may be some reasons for this--it may be easier to develop a variety of educational experiences for two or more problems than for just one problem. Also, agents who are more intently concerned with solving a major problem may more readily recognize the relationship of several smaller problems to the major one, therefore identifying more.

Our conceptual framework for impact programming has lead us to conclude that comprehensive educational program and multidisciplinary teams are most important to this concept.

Comprehensive Educational Programs: Our definition of a comprehensive educational program is, "one which consists of several educational events and activities focused on the target clientele and dealing with the priority problems." We feel that the program encompasses a variety of educational methods ranging from mass media to demonstrations. Research (Taylor, 1975, p. 52) suggests that many Extension workers do not have a sound understanding of a comprehensive program. Many of the agents involved in the research project did not seem to distinguish between a single learning experience repeated with several different clientele and several different learning experiences conducted with the same clientele. Some of the members of the impact team in West Florida felt that information dealing with different points of view should not become part of the educational program.

In the reserach (Taylor, 1975) cited earlier, agents made the following statements in response to the question of how much help they needed to conduct a comprehensive program:

> "About the same amount of help, unless you are a generalist."
>
> "It takes no more help than routine Extension work, except when you program in an area in which you have little knowhow."
>
> "The help needed depends on the experience of the agent."

These statements indicate that agents perceive needed assistance for comprehensive programming only in relation to their own ability. This suggests that they lack a full understanding of the concept.

Multidisciplinary team: Traditionally, county Extension agents have not worked as teams. They work alone to a great degree with some help from state specialists. One might posit that county Extension agents would develop a high need for independence which would imply that they would not feel the need for working on a team. Implications drawn from research do not necessarily support this notion. Research by Taylor (1975, p. 62) revealed that most agents fall in a medium level need for independence. Therefore, most agents are neither "independents" nor "yielders"--they fall in the middle range of self-reliance and susceptibility to norms and pressures of other people.

Agents with a low need for independence are considered "yielders." That is, they would be susceptible to the norms of other people. They tend to follow the leadership of a team of resource people. The literature suggests that yielders think of themselves as efficient, practical, and group-oriented. This suggests that these agents would help foster the cohesiveness of a team of resource people. The findings that most agents have a low to medium level of need for independence suggest two things: (1) that most agents are of the nature and disposition to work as team members, and (2) that originating impact programs does not rest with county-based staff but must come from state specialists, program leaders and administrators. Our experience indicates that it is extremely important for administrators to continually sanction and legitimize faculty members working on projects not generally considered to be in their area of responsibility.

Clearly defined goals:

Goal setting seems to be an important conponent of impact programming. After the situational data has been gathered, it seems that goal determination is fairly easy. Research (Bryon and Locke, 1976) indicates that goals are means to increasing motivation. Goals are usually easy to communicate and easy to identify with which tends to result in a broader base of support from agents, clientele and the total Extension organization. From goals come slogans that challenge those involved to achieve their task.

Evaluating Impact Programs:

Due to the fact that Extension has made major commitments to itself and clientele, many resources have been expended and goals clearly delineated. We feel evaluation to be an important component of impact programming. It should be approached from a very broad definition. That is, the process should delineate criteria, collect data and make judgments about the goals and should also make judgments about the worth of the educational process followed, the value of the end results of the program and the validity of the evaluation methodology.

Concerns

The educator and administrator should be aware of some of the concerns of impact programming. A strong commitment has been made to bring about change, thus the educator tends to become an advocator--he may not tell both sides of the story.

Impact programs tend to consume large amounts of resources and certain clientele may receive a disporportionate amount of Extension services. A program designed to expend large amounts of resources and bring about significant, maybe even radical, change may become an issue among local people. Therefore, there is greater need for stronger legitimization from advisory committees, local power structures and by administrators than for routine kinds of educational programs. In the case of agriculture where the objective is to significantly increase production, certain farm organizations may feel that increased production may adversely affect the price received for the commodity.

Summary

A search of the literature reveals that the body of knowledge concerning impact programming is limited. There is no clearly defined meaning of this concept among the various state Extension organizations. However, research and recognized authorities in Extension and education generally support the concept of impact programming.

We feel an Extension organization must clearly justify impact programming before the machinery is put into action. There may be many conditions that justify an impact program but we feel that there are three major ones: (1) a large gap exists between what is and what should be, (2) a body of knowledge exists that can be brought to bear on the problem, and (3) the quality of life must be improved for the specific clientele or people in general.

We feel that the most important components of an impact program are (1) identification of priority problems, (2) identification of specific target audience, (3) the development of a comprehensive educational program, (4) a multidiciplinary team, (5) clearly defined goals, and (6) evaluation.

Certain assumptions seem to be inherent with this approach to programming. The problem to be solved is complex. A large amount of change is to take place in a relatively short period of time; and, to achieve impact, group or societal problems are solved.

Administrators and educators should be cognizant of some concerns with this concept of education. Educators tend to become advocators, relatively large amounts of resources are expended, and there is a need for stronger legitimization for impact programming.

References

A People and a Spirit. A report of the Joint USDA-NASULGC Extension Study Committee. Fort Collins, Colorado: Colorado State University, 1968.

Barnlund, D. C., "A Comparative Study of Individual, Majority, and Group Judgment." *Journal of Abnormal and Social Psychology*, Vol. 58, No. 1, (1959), 55-60

Bennett, Claude F., *Analyzing Impacts of Extension Programs*. Cooperative Extension Work: U. S. Department of Agriculture and State Land Grant Universities Cooperating, April 1976.

Collins, B. E., and H. Guetzkow, *A Social Psychology of Group Processes for Decision Making*. New York: John Wiley and Sons, Inc., 1964.

Festinger, Leon, "Behavioral Support for Opinion Change." *Public Opinion Quarterly*, Vol. 28, No. 3 (1964), 404-418.

Knowles, Malcolm, *The Adult Learner: A Neglected Species*. Houston, Texas: Gulf Publishing Company, 1973.

Leagans, J. Paul, "A Concept of Needs," *Journal of Cooperative Extension*. Vol. 2, No. 2, (1964) 89-96.

Lorge, I., *et. al*., "A Survey of Studies Contrasting the Quality of Group Performance and Invididual Performances, 1920-1957," *Psychological Bulletin*, Vol. 55, No. 6 (1958), 337-372.

Mosher, A. T., *Varieties of Extension Education and Community Development*. Comparative Extension Publication No. 2, Ithaca, New York: New York State College of Agriculture at Cornell University, December, 1958.

Rokeach, Milton and Seymour Parker, "Values as a Social Indicator of Poverty and Race Relations in America," *Annals of American Academy of Political and Social Science*, Vol. 388 (March, 1970), 97-111.

Taylor, Clifton L., "An Analysis of Factors Associated with Programming Approaches," Ph. D. Dissertation, University of Wisconsin, 1975.

Tyler, Ralph W., *Basic Principles of Curriculum Instruction*. Chicago: University of Chicago Press, 1957.

Community Development: Problems and Opportunities for the Generalist*

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Introduction

Farmers, before the growth of agribusiness, were largely individualists who communed within extended family circles and with nature. In many counties, successful farmers developed a proud and coherent culture based on close integration among economic, family and religious institutions. Increasing urbanization of our population required greater productivity from farmers and technological innovations enabled our society to move in this direction. Rural sociologists applied their knowledge to help acceptance of innovative methods and to help adaptation to new social environments. Agricultural Extension, based in universities, played a key role in effectuating this diffusion, acceptance, and adaptation.

Now, rural areas are being affected by trends of residential, industrial and commercial development. To an increasing extent, they are the arenas for new issues such as the preservation of increasingly scarce prime agricultural land versus suburban sprawl; and individualistic life styles versus cosmopolitan styles and large organizations. These trends have brought forth more complex forms of power structure which include citizen input processes by legislative requirement, and increasing reliance on specialized technical information processing. The acquisition, processing and interpretation of vast amounts of information have become important aspects of our post-industrial society.

This writer believes that university-based sociologists are in a unique position to help people and local governments in rural areas by facilitating their use of information and by gathering and interpreting information. There are a number of different ways that sociologists can help. One way is to rely on a variation or expansion of extension services. Another is to rely on private consultants and specialists at community organization. The latter alternative, besides being costly, does not often lead to follow-up programs, and the community is left to handle follow-up on its own. Part-time consultants are used in many rural communities because the small population base of rural areas can neither provide the skills nor the resources required by full-time specialists. Thus, part time consultants are used. The liabilities of relying on consultants can be avoided if a nearby university provides the special knowledge in ways that facilitate community self-help efforts and fill some of the gaps in technical skills and information.

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It is possible that community service and development programs based in departments of sociology or other social science departments could be organized in ways that would bypass some of the bureaucratic restrictions that have grown within extension divisions and networks (Sower, 1976). Recent decreases in enrollment in sociology departments might be countered by providing relevant community service opportunities for sociology majors.

Elsewhere this writer has described three concurrent trends of change which create new opportunities for the university sociologist to contribute to community development (Notess, 1978). The trends are: 1) a maturation of sociology as a science, 2) the changing interests of students toward more relevant and career oriented learning, and 3) an increasing requirement, in government programs, for grass-roots citizen involvement in decision processes. A number of large state universities have taken advantage of these opportunities and used existing agricultural extension programs and networks to help rural citizens in the tasks of community development (Sower 1976). Some of these efforts have been successful in such projects as developing citizen organizations to obtain funds to carry out programs that serve community needs.

This paper discusses some important aspects of the role that university and college-based sociologists might play in contributing to community development.

Community Development

The roles of community service and development, as used herein, are defined with help from Rothman's threefold framework. The three roles include the process facilitator, the technical specialist who gathers and interprets information, and the activist-organizer (Cox, etal 1970 and Jacob, 1977). This paper deals only with the first two roles. They fit well together and, in combination, can enhance the college teaching role.

To help students appreciate the potential of sociological knowledge, it is useful to have them become involved in processes of community growth and change. Not only can they observe and analyze sequences of events, but they can savor the variety of social constructions of reality and the emotional aspects involved. The deeper understanding, which results from personal involvement helps the learning process.

Community development is defined, for the purposes of this paper as a process through which the well-being or quality of life of residents in a given locale is improved by having residents learn to help themselves through collective or cooperative efforts. The community development specialist is part of a team and contributes as a technical specialist and by facilitating processes that the residents themselves can use to achieve their goals. One task of the CD specialist is to guide the development of citizen organizations or informal groups by suggesting forms of organization suitable to the mixture of goals elaborated by the citizens and to the resources available to them. In this sense, community resources include leadership skills, information, access to technical skills, incentives and rewards, financial support and the extent of wide popular support.

Recent Experience with the Community Development Role

Since the 1960's a number of universities have conducted community service and development projects. A common way that these projects have been organized is through Agricultural Extension, which maintains a long-established network of county agents. Two such programs are described by West Virginia University and Clemson University. (Jacob, 1977; Marshall, 1976 and Miller, 1971). Sower describes other programs. (Sower 1976). Traditionally the main areas in which extension has contributed to community development (CD) has been in home economics and agriculture. The West Virginia experience noted that the county agents took on added and new responsibilities in the areas of health, education for early childhood, personal development and recreation (Miller, 1971).

The following roles and responsibilities were taken on by extension staff.

1) develop community awareness, support and participation for development;
2) assist in the organization of local citizens' groups and specific development projects;
3) serve as a liaison between community needs and university resources;
4) provide local leadership training when indicated and;
5) relate to the needs and problems of these programs as they developed. (Marshall, 1977)

The above list is not an unusual one for assisting in CD. The critical point is that the extent to which one takes on each of the five responsibilities must be clearly specified and must be compatible with the skills, incentives, time budget and financial resources of extension staff. It is possible for one faculty member to take on most of these five tasks if a single project is handled at a time and the milestones are organized at a pace where each task is largely completed before the next step is started.

A number of problems associated with the CD role were encountered. Three are listed below.

1) There has been high turnover of extension agents who were assigned CD responsibilities. This indicates an inadequate incentive system and inadequate training for coordinating the interdisciplinary task. (Marshall, 1971).

2) Because the CD role is a marginal one which comes between the vested power structure and the disadvantaged (socially and economically), a delicate balance of knowledge diffusion to both groups has to be maintained.

3) Selection of personalities and organizational forms suitable for the role requires experimentation and research. Marginal persons who have had mixed career experience and multidisciplinary team experience show promising potential, if selection processes are effective. It is important to have a long-term commitment to CD in the locality to overcome distrust between town and gown and to overcome the growing

pains which accompany most instances of institutional change.

It takes time for a particular faculty member and the administrators who serve above him to become familiar with the vagaries of working with the community. Time schedules have to be readjusted. The hidden agendas and knowledge gaps, which different people might have, have to be ascertained. Working teams of citizens, government officials and faculty have to be nurtured.

In sum, the task of building networks, winning trust, and gathering information is a full time job. To expect a busy extension agent to coordinate this developmental process is unrealistic, unless he is relieved of some of his traditional responsibilities. Even if this is done, it will take time for the community to become aware that their agent has changed some of his roles. With the latter thought in mind, in some cases, it might be desirable for a new person to come on the scene to coordinate the new role, rather than to change established images and expectations.

A new role parallel to the extension role might be more effective in coordinating CD outreach from university campuses. This paper examines some aspects of such a parallel role.

Examples of Community Service

Before describing the characteristics and requirements of a CD program on campus, three examples of community service are presented to acquaint the reader with the types of programs that this writer has in mind.

1) Interpretation of Census Data--Relating Student Projects to Community Service

In a regional planning district a complete set of data from the fifth count of the 1970 Census was not available to planning personnel at the city, county, or regional levels. A sociology faculty member learned that the state university had this information stored on computer tapes and obtained printouts of selected variables from the computer terminal at her college. This action required merely a cooperative effort between computer specialists at the two schools, an effort requiring a total of four telephone calls over the interval of a few weeks time. To select the variables desired, the faculty member checked with the regional planning staff so that she could obtain information useful for the agency needs as well as the faculty member's needs at the same time. The faculty member obtained the services of a summer CETA-funded student, who had computer experience, to transform the census data into percentages useful for comparative purposes.

In this way the college has started a data bank of local information in key punched form. This data has been used by students in three different sociology courses as the basis for exercises in community analysis. A one-hour session either individually or with a small group of students was sufficient to show them how to activate an SPSS packaged computer program which printed cross tabulations of data relevant to student term projects. Close supervision for the first few runs to show the student how to group (recode) particular variables and how to interpret the significance tests helped a number of students overcome hangups about the computer and statistical analysis.

The processed census data was also distributed to local planning agencies for their own use. In a few cases student term projects have been informative and copies will be made available to local officials.

2) Tenant Survey for a Housing Agency

A recent graduate from the sociology department of a small college was working as a social worker with a city housing authority and was interested in developing a proposal for a tenant services program. She sought information on the particular needs of tenants about half of whom were unemployed female heads of households. About a sixth were elderly. The social worker selected six tenants who helped to develop and administer a survey to all the households in three housing projects. A sociology professor from the college assisted the group in developing a questionnaire that obtained information about social interaction, employment, health, mode of travel, education, hobbies, television watching, church attendance, and other characteristics. About 100 items of information were keypunched for a total of 134 households. The key punching was done by a social work intern who was assigned to the agency for her field instruction. This information is currently going through cross tabulation analysis by students in a research methods course.

3) Need Assessment and Facilitation Roles

In South Carolina, the State Office of Rural Development helped to establish citizen grass roots committees at the county level for the purpose of improving the quality of life in rural areas. Two faculty members had the opportunity to attend the first meeting sponsored in their part of the state early in 1977. One of them has worked with people from the rural areas since that time to facilitate development of health care and recreation facilities. The experience gained during these past ten months has been invaluable. Many of the same problems encountered in extension CD efforts and described in textbooks were encountered in this case and they enabled the faculty member to understand the factors involved at first hand. These problems included: low attendance at public meetings, distortions by the local press of what occurred, some aspiring leaders raising overly high expectations of what might be achieved, misinterpretation of project goals, and many other problems.

Despite encountering these typical problems, continued effort and cooperation with relevant county and state agencies has enabled progress. The initial weeding-out operation eventually results in development of a smooth-working team wherein members have learned enough about each other to organize in effective ways for accomplishing tasks. Out of this effort evolved an awareness of a number of basic principles that a facilitator should follow. One such principle was that briefing and debriefing sessions before and after meetings can play a vital role in building and training a dedicated team.

The three examples outlined above are very small scale efforts in comparison to the ones conducted in West Virginia and outlined in references 14 and 15. However in some cases it is desirable to start small and, as experience is accumulated, the scope of activities can be enlarged. As trust is earned by the coordinators and the university as a whole, and as key influentials and leaders are identified within the communities, the effort can be expanded without the need for greatly expanded financial resources. The restrictions in time and direction that come along with funded projects can destroy a facilitating effort by reducing the flexibility of faculty time schedules. CD faculty should be able to devote time when time responses are critically important as a means for showing commitment.

Chracteristics of Community Developers

The traditional rewards for faculty members who become committed to community development are seldom adequate. Lionberger and Reddy, in an incisive analysis of reference group supports for a community development activity, found that only a few faculty members at a large state university were productive in the area of extension activity. These few found their rewards from reference groups outside the academic community, specifically from colleagues in government and industry and from the general public. In cases where the general public did not act as an important reference group, the university administration replaced them as an influential group. Faculty members who related to colleagues in their own department or their own academic discipline as primary reference groups were least productive in terms of extention type communication activities. (Lionberger and Reddy, 1976)

At a small college, with fewer than 10,000 students, faculty members tend to be generalists more so than do the highly specialized academicians one finds in the graduate schools of large universities. For this reason, community service and development projects at the small college are likely to be handled or staffed by one generalist or a small team. Seldom, in the small college, will more than three faculty members be involved to the extent of a quarter released time at any one time. Therefore, the types of CD projects done at a small college will differ from those typically performed at large public universities.

In the light of the foregoing discussion, it becomes possible to outline the ideal-type characteristics of a faculty member who is likely to become motivated to carry on a community development role, including coordinating on-campus efforts, town - gown interractions and the technical contributions to particular projects. Ideally, a CD faculty member should have acceptable teaching abilities, proven interest in working with and relating to community groups, the likelihood of being able to follow through on long-term commitments, experience with obtaining and processing socioeconomic data, and proven organizational ability. He should have the opportunity to teach a mixture of courses from the areas of urban and rural sociology, community development and organization, social movements and collective behavior, and research methods. Experience with the role of facilitator and a personality that is outgoing, friendly and sincere are other desirable characteristics. An ability to speak and to write to audiences which have different backgrounds and educational levels is an implicit requirement of the CD role. In reality, no one faculty member is likely to possess all of these desirable characteristics, but a workable mixture or a team effort among two or three faculty members can enhance the effectiveness of the CD role.

Lionberger and Reddy found that the most productive extension communicators worked more than 40 hours a week and were efficient in using their time (Lionberger and Reddy, 1976). The most productive faculty members appeared, in this writer's view, to be marginal men who functioned best in the interface area between the university and the community, obtaining personal rewards from both. They were not people who opted to play the traditional game of publish or perish in academic journals, but managed to keep a foothold in the university system either by virtue of the utility of their role as viewed by the administration or by satisfying the requirements of both roles.

Backup Support and Campus Ecology

Two important considerations that can often make or break the CD effort on a university campus are the campus ecology and the backup support system. For example, a faculty member who is interested in community development should have a centrally located office close to related departments, such as political science, social work, home economics and other departments which might have interested faculty and students. The increased convenience and probability of chance meetings that is associated with a central location can enable the CD person to establish an informal network of communication among commuting students and interested faculty. Such informal networks can be most useful in speeding communication to and from the campus via commuting students who have lived in their communities for a long time and know key leaders and local networks.

The easy availability of xerox services, typing services and a well-monitored telephone service is also a must. One-or two-day delays in getting a letter typed or copied can triple the duration of information feedback cycles, and such restrictions can cause a timely deadline to pass without a response. These types of support services may appear to be trivial, but on a small campus, where it is likely that one faculty member coordinates and assumes the responsibility for a CD effort, an accumulation of minor frustrations that hamper communication can sap enough motivational energy to halt the effort.

Coordination Responsibilities

To enhance the chance that community service efforts will decrease rather than increase town - gown estrangement, it is desirable to coordinate contacts between students and faculty, on the one hand, and local groups on the other hand. Distribution of term papers, reports, and other forms of communication should be monitored to prevent or correct any misunderstandings that might arise. Adequate precautions can be taken without the stifling effects of review committees and censorship. For example, agency staff in one city became bothered when a large number of students could write the agency description as a term project and turn a copy over to the agency. By so doing it would be possible, for the faculty concerned, to ensure that the descriptive information contained the information that he wanted his students to obtain.

To assure that town - gown relations will not be exacerbated, the faculty member should choose topics carefully and check the potential for misinterpretation by having townspeople, who are directly involved with the issue at hand, review the project plan. In this way, student projects and faculty projects can be selected so as to contribute to, rather than hamper, the development of mutual trust between town and gown. It is necessary to caution that such coordination need not be carried out in the way that restricts any particular research or stifles initiative and creativity.

If a touchy, politically sensitive topic is involved, it might be desirable to present several sides of the issue in an objective manner. Each group of local people can be apprised of possible impacts associated with various alternative proposals for action. Such interaction will provide the CD facilitator with information useful for reducing misunderstandings and arranging the timing for release of information to enhance the chance that it will be read.

Occasionally a timely topic must be shelved in the middle of a semester because an issue becomes too touchy. This means that there is insufficient time and staff available to handle the issue in the objective manner outlined above. Careful selection of students and topics can reduce the chance that such situations will arise. A principle relevant to this illustration is the old one, "Don't bite off more than you can chew."

Some Difficulties With The CD Role

An important problem associated with the CD role is that an effective way to integrate the role into university and college organizations has not crystalized. A variety of methods such as basing the coordinative aspect of the role in an extension division, a reserach center, or a public service program are currently being tried. In each of these cases, the CD responsibility is appended as an after thought to a structure which has an established purpose.

In some cases where a tenured faculty member, committed to community service and familiar with the formal and informal structures of campus organization, has taken on the responsibilities of coordination, much can be accomplished. The amount of accomplishment, in part, is related to the extent to which the faculty member is relieved of committee and other responsibilities. Reduction in teaching load can also be helpful as long as the faculty member does not lose contact with students and staff who are a vital resource for CD efforts.

Institutionalization of the CD role has not yet occurred to an extent where diffusion to other universities can occur rapidly if at all.

It is the intent of this paper to call attention to this emerging role with the hope that discussion and perhaps special workshop sessions at future professional meetings will help to solve some of the problems associated with the role.

Conclusions and Recommendations

The increasing proportion of high school graduates who attend college and the increasing tendency for citizen participation in decision-making to be required in federally sponsored programs sets the stage for university sociologists to help add relevance to student projects and serve the local community by developing a new role.

The community development role includes information gathering and interpretation plus the facilitation of grass-roots organizations. Coordination of student term projects, development of a computerized data base, and establishment of networks that extend from campus into the community require a special mix of skills, incentive structures and experience. Certain types of marginal persons who have interest in and need for rewards from both the community and from students appear to be well suited for this role. It is necessary that the university administrative system provide backup support, reduce the traditional responsibilities and permit enough flexibility for the coordinator to function effectively.

The time is right for a survey of pilot projects ranging from large-scale efforts such as that at West Virginia University to small one-man efforts at small colleges. The information from these experiments should be organized to provide guidelines for a second stage of pilot projects. A special national workshop sponsored by a number of interested professional associations is proposed as one way to develop guidelines for the next stage of pilot programs.

Bibliography and References

Boulding, Kenneth E.
1966 The Impact of the Social Sciences, Rutgers University Press.

Christenson, James A., Voland, Maurice E., and Santopolo, Frank A.
1977 "Evaluating the Productivity of Sociologists in Extension, Teaching, and Research", Rural Sociology, Spring 1977.

Cox, Fred M., Erlich, John L. Rothman, Jack and Tropman, John E., Editors.
1970 Strategies of Community Organization--A Book of Readings, F. E. Peacock Publishers.

Foss, Dermis C.
1977 The Value Controversy in Sociology--A New Orientation for the Profession, Jossey-Bass.

Gelfand, Donald E.
1975 "The Challenge of Applied Sociology," The American Sociologist, February 1975.

Jacob, Nelson L., Lilley, Stephen C., and Wynn, Eddie D.
1977 "An Action Scheme for Rural Community Development Practitioners" Clemson University (Department of Agricultural Economics and Rural Sociology).

Liebert, Roland J. and Bayer, Alan E.
1975 "Goals in Teaching Undergraduates: Professional Reproduction and Client-Centeredness," The American Sociologist, November 1975.

Lionberger, Herbert F. and Reddy, B. Anji.
1976 "Reference Group Influence on Extension Communication of a Social Science Faculty" Rural Sociology, Spring, 1976.

Marshall, H. Peter and Miller, Robert W.
1976 "The Challenges of a Community Development Role for the Public University." West Virginia University: Bulletin, Series 77, No. 1-2, July 1976.

Miller, Robert W., Johnson, BEryl A., Smith Wil J., and Feller, Frederick A.
1971 "Approaches to University Extension Work with the Rural Disadvantaged." West Virginia University: Bulletin, Series 72 No. 3-3 Sept. 1971

Notess, C. B.
1978 Community Service and Development: Some Opportunities for Small Colleges", a paper prepared for presentation at the Southern Sociological Society annual meeting, March 30 April 1, 1978 in New Orleans.

"School Enrollment--Social and Economic Characteristics of Students: October 1976," Current Population Reports Series p-20, No.309 US Bureau of the Census, July 1977.

Sower, Christopher. "An Experimental Sociology of Institutional Renewal", Rural Sociology, Spring 1976, pp. 7-24.

Section I

DEMOGRAPHY AND ECOLOGY

"Regionalization of 1960-1970 Net Migration Rates for Counties in Three States." Paul E. Lovingood, Jr., University of South Carolina; and Edward L. McLean and Stephen Lilley, Clemson University.

"Educational and Occupational Profiles for U.S. High School Seniors in the Class of 1972." Peggy J. Ross, Economic Development Division; Economics, Statistics and Cooperative Service, U.S.D.A.

REGIONALIZATION OF 1960-1970 NET MIGRATION RATES FOR COUNTIES IN THREE STATES*

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The classification of phenomena is common to most sciences because of the need to derive generalizations from reality. The aim of classification is to produce groups (regions, classes, types, clusters, etc.) in which within group variance is minimized and between group variance maximized. In regional analysis classification permits the giving of names to spatial units and facilitates the transmission of information pertaining to those units. In this study regions, classes, types, clusters, etc. are all considered to be the same and are defined as relatively homogeneous areal units derived by specified criteria. The particular regions formulated here are those derived by multivariate classification of migration data. A review of the procedures of grouping and regionalizing as used by the various disciplines is not appropriate here for such already exists in the literature (Armand, 1965, p. 35; Grigg, 1965, 465-491; and others).

The purpose of this paper is to test the hypothesis that a system of grouping of areal units (counties) exists in which specific characteristics of 1960-1970 net migration rates for the states of Georgia, North Carolina, and South Carolina can be recognized. It is argued that by defining and mapping such regions their spatial character can be better understood and explained.

Regions in this paper are defined as one or more counties in which specific characteristics of migration rates exist. The counties do not have to be contiguous; i.e., a region may be comprised of contiguous and non-contiguous counties. For descriptive purposes, regions can be delineated by examining a wide range of geographic or demographic characteristics of counties. Net migration by age, sex, and race provide an example of such a matrix. This information is useful for determining prospective population increase or decline in relation to social and economic characteristics of given regions at current or future points in time. From a practical perspective there may be need for adjustment in the quality and quantity of public services and social and economic development efforts.

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MIGRATION

Migration, in general, refers to individuals and families changing their place of residence for a substantial period of time and crossing a geographic-political boundary (state or county) in the process. The specific distance traveled and specific period of residence necessary for a person to be classified as a migrant varies, depending on source of definition. Generally, a person crossing a county or state boundary to establish residence and remaining for any period of time is considered a migrant.

Migration generally entails two basic types of moves - non-voluntary and voluntary. Non-voluntary moves include: (1) reassignment in the military and (2) transfers involving occupational requirements. Voluntary migration includes: (1) moves to accept new employment, (2) moves for education or for retirement, and (3) a great range of moves for other social and economic reasons.

The literature indicates that job and employment opportunities may be the most significant factors for individuals or families when considering whether to migrate away from or to a particular community (Pack, 1974; Schwind, 1975; Zelinsky, 1974). Along with job opportunities, social factors are also important when an individual or family makes a decision regarding migration, particularly when kinship and friendship ties affect deliberations about moving. Generally, in the United States, people move voluntarily because they feel it is socially advantageous and involuntarily out of economic necessity.

Migration, as such, changes the composition and organization of counties and regions which lose migrants as well as those which receive migrants. The changes in the population numbers and composition are significant from several frames of reference. First, individuals and families must adapt and adjust to the changes in environments associated with migration. At the same time the base population of the sending and receiving counties must adjust to the loss or gain in population due to migration. These adjustments for the base population of a region are often complicated by another factor, the age distribution of the migrating population.

For example, data for South Carolina suggest that nearly one-half of all persons migrating out of the State are between 20 and 34 years of age (Parker and McLean, 1975). Thus, the impact of out-migration is especially critical because a majority of migrants (the males and many females in this age category) are active participants in the labor force. Persistent net outmigration of this age group is cumulative; lack of employment opportunities results in declining economic vitality, and a regressive cycle may develop. Consequently, net outmigration of any magnitude causes a decline in the tax base which creates financial problems for state and local governments. Thus, movement of people can be advantageous and disadvantageous to the migrants themselves, as well as to the counties and regions losing and gaining the migrants.

Outmigration is not necessarily disadvantageous for a given region or county. Labor force surpluses may exist in certain areas and outmigration will actually increase incomes and levels of living of those remaining. However, persistent outmigration of individuals who previously financed public education and other services, is detrimental to given counties and regions. On the other hand, inmigration of individuals who lack occupational training and quality education is detrimental to given areas of destination.

Inmigration to an area is not always viewed favorably either. Those regions experiencing inmigration often face difficulties, since a wide range of economic services must be provided. New residents need public services, such as schools, police and fire protection, clean water, waste disposal systems, streets and highways, and parks and playgrounds. Inmigration and population growth resulting from this process is currently being questioned on terms of potential social and behavioral problems. In addition, unchecked population growth is generally considered to be detrimental to the natural environment as a result of increasing population densities and associated activities. This concern is real in some areas which have called for a moratorium on all inmigration to help preserve the natural environment. It can be concluded, however, that inmigration of educated, voluntary movers into a region is advantageous to that particular area until a saturation point is reached.

REGIONALIZATION OF MIGRATION DATA

The notion of potential population distribution and redistribution as a policy issue is relevant here. It will be assumed that some redistribution of population is necessary, whether through deliberate public policy measures or laissez-faire. Economic opportunities and labor force location must be aligned. It is desirable to reduce congestion in densely settled urban centers and to maintain some level of population in sparsely populated areas for reasons of public service efficiencies.

However, the authors are not suggesting specific policy measures for regions in which net out or inmigration is substantial. The authors do believe it is essential to analyze additional demographic data and to gather information about the physical geography, economy, public services, and social, cultural, and political conditions of each region.

METHOD OF REGIONALIZATION

The regionalization in this study was based on 1960-70 net migration estimates by counties for North Carolina, South Carolina and Georgia (Bowles, et. al.,1975). Sixty-four age, sex, and color variables were used for all counties in the three-state area with the exception of Chattahoochee/Muscogee Counties, Georgia for which no separate data exist. These two contiguous counties were considered a single unit. First, the sixty-four variables were subjected to principal components analysis in order to derive a factor score for each county (Nie, et. al., 1970, 208-244). The orthogonal transformation of the original variables makes them more suitable for input into grouping algorithms, the second step. But first, because the initial components account for more of the variance in the data set than the remaining components, the factor scores were multiplied by the eigen values as a means of weighting their importance in relation to the total variance. The factor scores were then grouped using Ward's grouping algorithm. This algorithm uses Mahalanobis' distance statistic (D^2) to maximize geometric distance between grouped points (Ward, 1963, 236-243). This procedure yielded seven migration regions. To verify the validity of the groups or regions, each was subjected to discriminant analysis to detach misclassified counties. This procedure examines the within group covariance matrices and uses coefficients chosen in such a way that the ratio of between group sums of squares are maximized. Some counties were reclassified, placed in their proper group, and all the regions were mapped (Map 1). The average value of the original variables was calculated by regions to facilitate the understanding of regional characteristics (Table 1).

FINDINGS AND DESCRIPTION OF THE REGIONS

The average value of net migration rates by regions, 1960-1970, by counties in North Carolina, South Carolina and Georgia are presented in Table 1, the resulting regionalization is illustrated on Map 1, and the Standard Metropolitan Statistical Area (SMSA) counties, as of 1970, are portrayed on Map 2. It is worthwhile to note that, since 1970, some counties in all three states have reversed their patterns of net outmigration.

Region 1 comprises the largest group of counties in the three states and these counties have high rates of net outmigration. Generally, the age categories 10 through 39 years of age, indicate substantial net outmigration, particularly for the non-white population. This region includes most of the counties in the states that are both coastal plains and agricultural in character. It also includes counties with a forest products economic base, those with urban centers less than 50,000 population, and one SMSA central city county.

Region 2 is comprise of 69 counties and has substantial net outmigration of non-white population in the 20-39 years of age categories. The largest number of counties in this group are piedmont in character; there are also 16 SMSA counties in this region, most of them also located in the piedmont of the three states.

Region 3 is comprised of 71 counties. Net outmigration is high for age categories 10 through 29 years of age. These counties are located in the coastal plains, midlands, and piedmont areas. There are no metropolitan central city counties in this region, but many counties with urban centers less than 50,000 population and four SMSA counties. Many counties in this region have experienced declines in their agricultural economic base, and/or were dependent on a textile economic base.

There are 15 counties in Region 4, with substantial net outmigration from the 15 through 29 years of age categories. This is largely a mountain region. The economic base is viable in this region but it does not absorb the population gained from natural increase.

There are seven counties in Region 5, with substantial net outmigration from several age categories. This is the only region with consistent net outmigration of the very young, but generally indicates net inmigration of the elderly. The net inmigration of males, 15-24 years of age is high, with the rate for white females, 20-24 years of age, also high. This region comprises four coastal plains, two piedmont, and one metropolitan county. It seems to combine the pull factors of military installations, institutions of higher education and retirement communities.

Region 6 comprises 16 counties and reveals net inmigration of white population and net outmigration of nonwhite population. There are no Group VI counties in North Carolina. Four of these counties are non-central-city SMSA counties. The remaining counties in this region are adjacent to either urban centers or SMSA counties. This region is truly "suburban" in character.

Region 7 is DeKalb County, Georgia, in the Atlanta area. Net inmigration occurred for 63 of the 64 age categories in this county. Furthermore, the rates were high for both non-white and white population in most age categories.

DISCUSSION

A regionalization of counties in North Carolina, South Carolina, and Georgia helps to explain net migration patterns, 1960-1970. Counties that are both coastal plains and agricultural in character experience high rates of net outmigration for non-white males and females 20-34 years of age. Birthrates were high, capital replaced labor in agriculture, and blacks migrated out of this region.

A region that is piedmont in character and includes SMSA counties, experienced moderate net outmigration rates of non-white population. Industrial diversification and modernization of the textile industry may reduce these flows in the 1970's.

A region with counties in three geographic areas (coastal plains, midlands and piedmont), experienced substantial net outmigration of white population 20-29 years of age, as well as for non-white population. High birthrates, decline in farming, and lack of industrial innovation probably contributed to this trend.

A region that is truly mountain in character also experienced high rates of outmigration of young adults from the white population. The proportion of non-white population is small and there are no South Carolina counties in this region. The economic base includes forestry, light industry, agriculture, and tourism. A regional configuration with military, college, and retirement character is somewhat distinct. One of the clearest classes is that with suburban characteristics.

SUMMARY

Counties in North Carolina, South Carolina, and Georgia have been classified into seven regions by multivariate classification of net migration data. Spatial, economic, political, and social trends in these states may be better understood as a result of this regionalization.

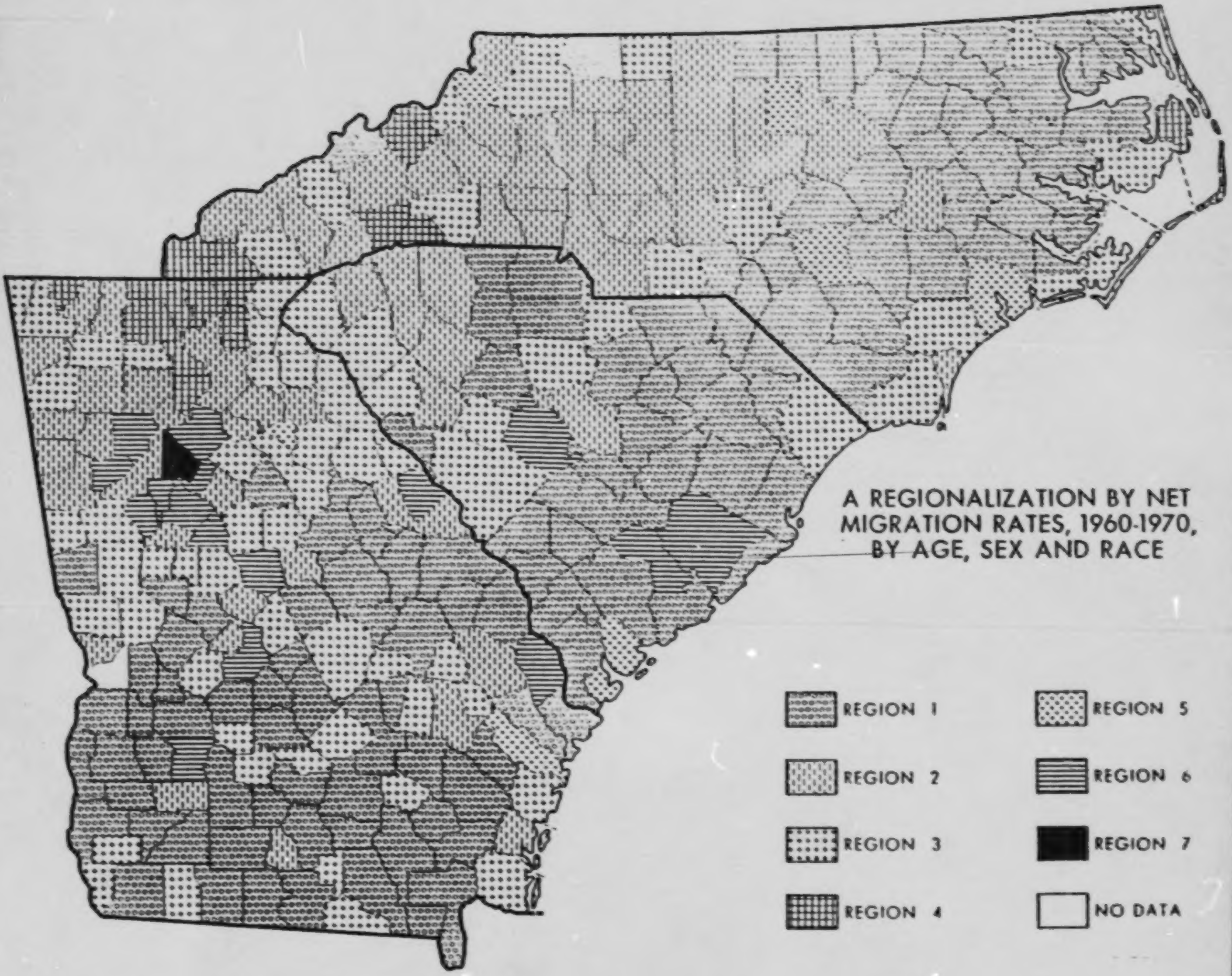
Substantialnet inmigration occurred in three regions but only 24 counties. This pattern is associated with the military, colleges, retirement (7 counties); with suburbanization (16 counties); and metropolitanization (1 county).

Substantial net outmigration occurred in four regions and 280 counties. The variable associated with these regions are complex and interrelated but include: high birthrates, substitution of capital for labor in agriculture, decline in farming, and lack of industrial diversification. Net outmigration of young non-white adults is most common in the coastal plains and net outmigration of young white adults is most common in the mountains of North Carolina and Georgia. Nevertheless, net outmigration was not uncommon in the midlands and piedmont areas.

TABLE 1

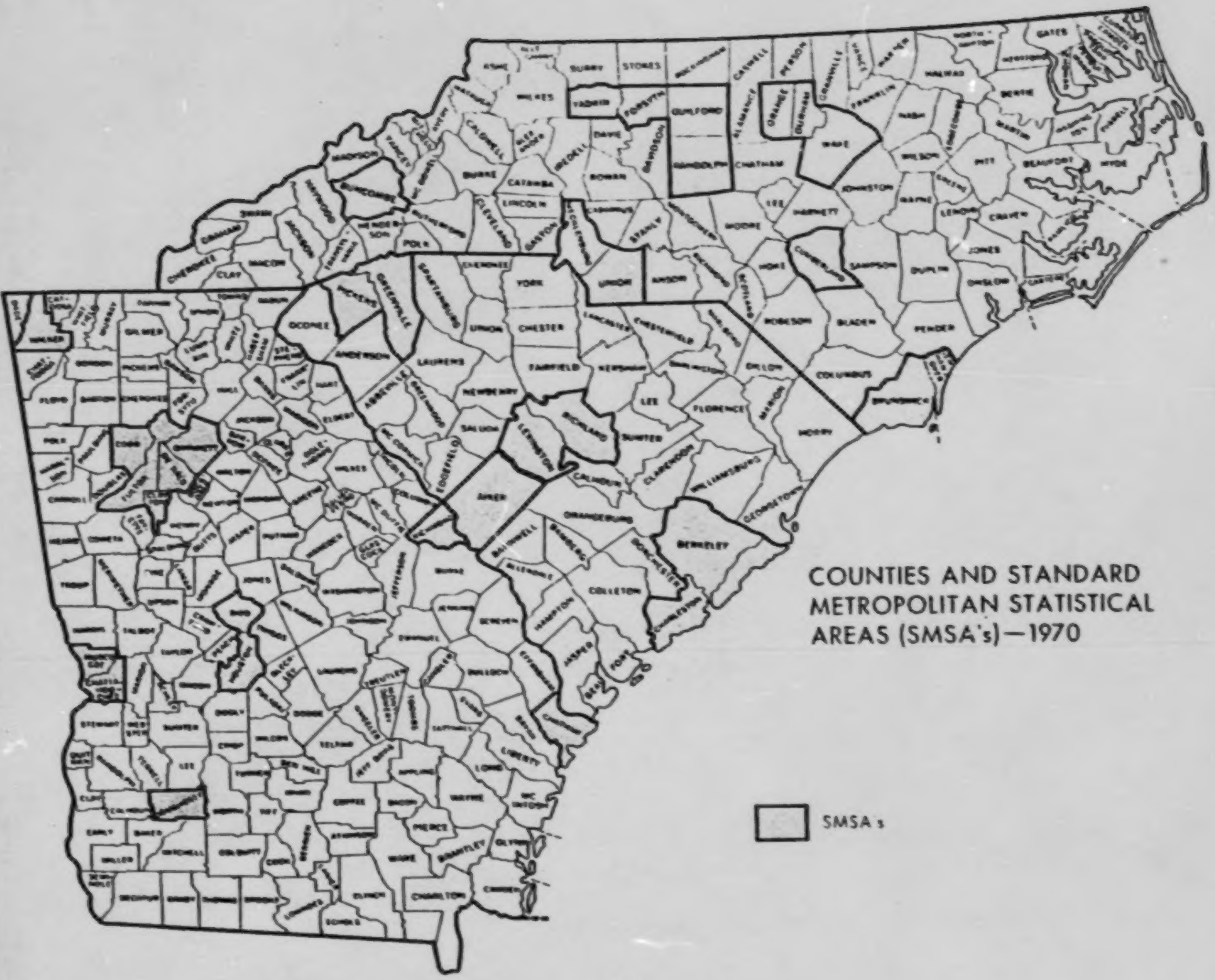
AVERAGE VALUE OF NET MIGRATION RATES BY REGIONS, 1960-1970
(by Counties in North Carolina, South Carolina and Georgia)

Variables	REGION						
	1	2	3	4	5	6	7
Male White Age 0-4	2.98	2.27	9.40	3.27	-13.97	23.07	7.00
Female White Age 0-4	3.03	2.27	9.22	3.25	-13.97	23.07	6.90
Male Non-White Age 0-4	-4.55	1.64	-2.58	-15.42	-2.57	1.44	27.00
Female Non-White Age 0-4	-4.42	0.51	-2.23	8.45	-2.51	1.50	27.00
Male White Age 5-9	1.92	5.81	9.64	5.60	-21.21	65.37	31.40
Female White Age 5-9	2.05	5.74	9.63	5.58	-21.24	65.25	31.40
Male Non-White Age 5-9	-16.05	-2.97	-4.77	-7.01	-12.84	-5.61	77.00
Female Non-White Age 5-9	-16.41	-3.15	-4.84	-7.31	-12.34	-5.57	76.90
Male White Age 10-14	2.21	8.00	7.45	3.13	-11.54	63.46	25.70
Female White Age 10-14	0.53	7.24	6.88	4.89	-13.31	59.34	28.20
Male Non-White Age 10-14	-19.41	-2.05	-13.16	0.81	-20.03	-13.69	113.70
Female Non-White Age 10-14	-21.11	-3.12	-12.71	4.09	-20.90	-14.12	107.60
Male White Age 15-19	-5.48	8.30	-4.95	-5.80	152.20	30.78	14.80
Female White Age 15-19	-6.10	7.03	-5.30	-5.73	60.43	33.16	20.40
Male Non-White Age 15-19	-27.39	2.38	2.35	2.40	40.71	-19.52	96.60
Female Non-White Age 15-19	-26.48	-4.38	-17.36	-1.37	-7.44	-20.56	114.80
Male White Age 20-24	-19.09	1.19	-31.65	-34.65	390.83	21.71	23.30
Female White Age 20-24	-24.02	2.72	-22.45	-27.97	181.14	50.89	66.50
Male Non-White Age 20-24	-55.11	-16.73	-39.34	7.26	89.79	-31.24	115.00
Female Non-White Age 20-24	-50.82	-14.06	-42.16	-13.83	2.71	-36.49	156.00
Male White Age 25-29	-23.36	-0.99	-18.90	-28.45	-11.74	94.62	108.80
Female White Age 25-29	-22.04	0.09	-16.35	-23.00	34.00	99.52	109.70
Male Non-White Age 25-29	-59.09	-23.01	-46.86	9.78	-24.94	-39.02	182.90
Female Non-White Age 25-29	-56.35	-22.23	-45.67	13.42	-12.83	-40.27	181.50
Male White Age 30-34	7.74	12.94	14.53	5.79	-55.31	122.57	88.20
Female White Age 30-34	4.73	7.22	10.22	6.65	-24.99	98.05	53.80
Male Non-White Age 30-34	-39.20	-11.23	-29.63	7.97	-35.70	-24.71	143.90
Female Non-White Age 30-34	-34.78	-15.70	-25.56	-5.13	-16.51	-20.90	127.00
Male White Age 35-39	6.08	8.81	8.93	5.84	-21.53	75.49	38.20
Female White Age 35-39	1.85	7.07	7.54	6.00	-9.81	59.36	28.70
Male Non-White Age 35-39	-22.42	-4.53	-16.70	0.48	-20.37	-12.81	120.70
Female Non-White Age 35-39	-21.94	-5.13	-15.09	10.35	-19.20	-11.24	103.80
Male White Age 40-44	3.01	7.74	8.34	6.45	-13.30	59.26	25.20
Female White Age 40-44	-0.54	5.93	6.01	4.83	-7.16	46.97	20.40
Male Non-White Age 40-44	-11.20	1.00	-9.51	-1.31	-0.26	-2.23	108.90
Female Non-White Age 40-44	-12.68	-1.81	-4.56	-14.57	-4.70	-5.49	104.60
Male White Age 45-49	-0.07	5.55	7.55	8.50	-10.67	43.54	22.00
Female White Age 45-49	-0.50	3.63	3.25	4.77	-6.76	41.29	19.40
Male Non-White Age 45-49	-10.35	0.47	-10.24	-6.52	2.81	-8.63	98.10
Female Non-White Age 45-49	-12.93	1.28	-2.96	2.13	-6.51	-11.66	102.80
Male White Age 50-54	-0.63	4.01	4.81	7.02	-9.79	42.52	17.40
Female White Age 50-54	-0.45	4.94	4.63	6.40	-0.19	39.71	17.30
Male Non-White Age 50-54	-11.37	1.68	-3.38	-23.53	-2.30	-5.12	98.70
Female Non-White Age 50-54	-11.25	-0.08	-4.76	9.85	1.27	-7.75	76.70
Male White Age 55-59	-1.50	3.30	4.87	8.67	-1.04	31.73	10.30
Female White Age 55-59	1.51	4.02	6.96	9.93	5.27	31.59	11.70
Male Non-White Age 55-59	-9.07	-2.00	-1.34	23.11	-5.69	2.61	86.10
Female Non-White Age 55-59	-9.12	-3.04	-5.46	2.39	7.59	-3.27	82.20
Male White Age 60-64	0.47	3.52	20.39	16.93	5.06	26.80	2.30
Female White Age 60-64	1.86	6.07	11.98	16.03	13.96	30.91	6.10
Male Non-White Age 60-64	-3.04	1.04	-0.13	3.50	-9.26	-4.58	75.90
Female Non-White Age 60-64	-4.01	4.42	-4.18	28.27	4.26	-4.32	68.40
Male White Age 65-69	0.60	4.69	15.29	24.85	12.09	25.90	-0.70
Female White Age 65-69	3.36	5.07	9.30	13.55	13.81	25.50	8.20
Male Non-White Age 65-69	0.07	8.99	4.40	2.87	18.77	2.79	70.10
Female Non-White Age 65-69	-2.05	5.75	-3.01	-14.81	7.77	-1.46	59.90
Male White Age 70-74	-0.96	5.07	9.63	23.40	14.17	21.91	1.90
Female White Age 70-74	1.20	3.50	7.70	10.61	5.77	21.62	10.80
Male Non-White Age 70-74	0.27	4.12	-10.51	3.11	3.73	1.92	59.30
Female Non-White Age 70-74	-5.11	-4.01	-2.89	-18.39	11.11	-6.81	70.40
Male White Age 75+	-6.03	2.81	2.89	10.05	6.69	7.66	11.80
Female White Age 75+	-2.60	2.02	2.06	2.08	3.53	23.30	13.00
Male Non-White Age 75+	-12.80	-4.72	-4.75	-28.25	10.84	-15.99	69.60
Female Non-White Age 75+	-16.69	-2.22	-11.26	24.11	-5.46	-8.88	51.10
Region Size (Counties)	125	69	71	15	7	16	1



A REGIONALIZATION BY NET MIGRATION RATES, 1960-1970, BY AGE, SEX AND RACE

REGION 1
REGION 2
REGION 3
REGION 4
REGION 5
REGION 6
REGION 7
NO DATA



COUNTIES AND STANDARD METROPOLITAN STATISTICAL AREAS (SMSA's)—1970
SMSA's

BIBLIOGRAPHY

Armand, D. L.
"The Logic of Geographical Classification and Regionalization Schemes," Soviet Geography, Review and Translation, Vol. 6, No. 9 (1965), p. 35.

Bowles, Gladys K., et. al.
Net Migration of the Population, 1960-1970 by Age, Sex and Color, Population-Migration Report, Part 3, South Atlantic States. Economic Research Service, U.S. Department of Agriculture; Research Applied to National Needs, National Science Foundation; Institute for Behavioral Research, University of Georgia; Athens, Georgia, December, 1975.

Graves, Philip E.
"A Reexamination of Migration, Economic Opportunity and Quality of Life," Journal of Regional Science, Vol. 16, No. 1 (April, 1976), pp. 107-112.

Grigg, D.
"The Logic of Regional Systems," Annals, Association of American Geography, Vol. 55 (1965), pp. 465-91.

Nie, N. H., et. al.
Statistical Package for the Social Sciences. New York: McGraw-Hill Book Company, 1970.

Pack, Janet Rothenberg
"Determinants of Migration to Central Cities," Journal of Regional Science, Vol. 13, No. 2 (August, 1974), pp. 249-260.

Parker, Thales, and Edward L. McLean
Migration Into and Out of South Carolina. Technical Bulletin 1055, South Carolina Agricultural Experiment Station, Clemson, SC, December, 1975.

Schwind, Paul J.
"A General Field Theory of Migration: United States, 1955-1960," Economic Geography, Vol. 51, No. 1 (January 1975), pp. 1-16.

Tarver, James D.
"A Test and Modification of Zipf's Hypothesis For Predicting Interstate Migration," Demography, Vol. 10, No. 2 (May, 1973), pp. 259-275.

Zelinsky, Wilbur
"Selfward Bound? Personal Preference Patterns and the Changing Map of American Society," Economic Geography, Vol. 50, No. 2 (April, 1974), pp. 144-179.

EDUCATIONAL AND OCCUPATIONAL PROFILES FOR U.S. HIGH SCHOOL SENIORS IN THE CLASS OF 1972*

by

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The High School Class of 1972 consisted of over three million seniors from public and non-public schools in the United States. Of these, approximately 3,050,000 completed the requirements for high school graduation (National Center for Educational Statistics, 1972). The purpose of this paper is to describe both preferences and behaviors associated with educational and occupational goals of seniors in the class of 1972. National population estimates are presented (1) for educational and occupational preferences of seniors during Spring, 1972 and Fall, 1974 and (2) for the educational and/or occupational activities at the latter time period. The major analytical concern is to examine the association between community of residence and the educational and occupational variables when differences in sex, ability and socioeconomic status are taken into consideration.

Background

An extensive body of literature exists to support the contention that adult occupational attainments are influenced by a complex set of social and psychological factors beginning in early life (e.g., Blau and Duncan, 1967; Duncan et. al., 1972; Sewell et. al., 1970). In brief, status attainment has been viewed as a function of direct and indirect effects of social origins, socialization and interpersonal experiences and social-psychological orientations toward education and occupation during adolescence. Countless studies (see Kuvlesky and Reynolds, 1970) have focused on the educational and occupational preferences of adolescents in relation to adult attainments.

Less attention has been given to the effects of rural-urban residence on educational and occupational orientations and experiences. Lipset (1955), who found that the occupational status positions of rural and small-town migrants to urban areas were lower than urban-reared residents, posited that the differences were attributable to lower occupational aspirations of the rural adults stemming from limited adolescent experiences with the full spectrum of occupational possibilities. Complementary studies (Burchinal, 1961; Boyle, 1966; Grigg and Middleton, 1960; Haller and Sewell, 1957; Sewell, 1964; Sewell and Orenstein, 1965) have considered the relationship between community of residence and educational and occupational factors with varying results.

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In general, research has demonstrated differences by rural-urban residence in educational and occupational preferences, particularly when rural farm and rural non-farm comparisons (Haller, 1960) have been made. At the same time, research findings have suggested a tendency for the differences to partial-out to some extent when other factors, particularly sex, socioeconomic status, race and ability,have been held constant. Feller (1974) found very slight rural-urban differences in scholastic performance of college students. In a longitudinal study of occupational attainment, Featherman (1971) showed that white males,farm and rural reared, had lower educational attainment than urban males which influenced differential occupational attainment.

To my knowledge, no study based on a national sample has been conducted to focus on residential differences in educational and occupational preferences of high school students. The present analysis represents a preliminary effort to examine variations in educational and occupational orientations among members of a high school senior class by community of residence. It is my expectation that rural-urban differences in educational and occupational preferences will be slight when other factors are taken into account. One reason prompting this expectation is that the common experiences of American youth via exposure to the mass media have increased drastically in the past ten to fifteen years when many of the earlier studies of rural-urban differences were conducted. Furthermore, evidence exists to show that educational prerequisites perceived necessary for the farm occupations are changing. While the number of farmers and farm managers declined sharply in the 1960 to 1970 time period, the number of farmers and farm managers with a college degree rose 62 percent in the same time period. (Flinn and Munoz, 1977)

Data and Methods

The National Longitudinal Study of the High School Class of 1972, a survey initiated and presently administered by the National Center for Educational Statistics, provided a data base for the present analysis. NLS is a comprehensive file (see Levinsohn, et. al., 1976). The current version contains more than 1,600 variables representing measures of the educational and vocational development of high school graduates as well as personal, social, familial and institutional factors assumed to be associated with development. The intent of NLS is "to provide statistics on a national sample of students as they move out of the American high school system into the critical years of early adulthood." (Levinsohn, et.al., 1976:iii) A release file with selected information for the base-year, 1972 and follow-ups in 1973, 1974 and 1976 is currently available to users. The design calls for a fourth follow-up in 1979.

Sample

NLS is based on a two-stage highly stratified 1/ sample of all 1972 twelfth graders in public and non-public schools in the fifty

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1/ First stage sampling units were schools, stratified according to seven variables: type of control, region, senior class size, proximity to institutions of minority enrollment, community income level and degree of urbanization.

states and the District of Columbia. The base-year sample involved 1,200 primary sample schools and 21,600 students. In an attempt to correct for school nonresponse, additional data from back-up schools, primary schools who failed to respond for the base-year, and 16 augmentation schools 2/ increased the number of schools to 1,318 in the final NLS file. The file is built on available data at each time period representing a total of 22,532 respondents.

Weighting the Sample

NLS is a weighted sample. Because of the complex design, a weighting procedure 3/ was employed in order to obtain unbiased sample estimates of the population parameters (Bailey, 1976).

Unadjusted student weights, when summed, represent an estimate of the total number of students in the population and are appropriate for parameter estimates, assuming complete response. However, it was necessary to calculate adjusted weights to reduce bias from instrument 4/ non-response.

Essentially, the procedures 5/ to derive adjusted weights involved a weighting-class method based on five classifier variables. For each instrument or combination of instruments, adjusted weights (which summed to the total number in the population) were calculated whereby nonrespondents were assigned a weight of zero and respondents were assigned an adjusted value.

Data

Measurement of the variables selected from NLS file for this analysis was as follows:

1. Educational aspirations refers to the highest desired level of education along a four point continuum from high school to college graduate as measured in the base-year.

2/ Schools selected to represent schools not included in the sampling frame.

3/ Unadjusted student weights were computed from inverses of the sample inclusion probabilities expressed as:

$$Phi = nh \left(\frac{Ahi}{Ah}\right), \text{ where}$$

nh=number of schools in final
NLS sample for stratum-h;
Ahi=size measure for school-i of stratum-h;
Ah=sum of size measures for all schools in stratum-h.

Thus, adjusted weights were calculated as: $Wuhij = \frac{1}{Phi} \cdot \frac{Nhi}{nhi}$, where

Nhi=number of senior students in school-hi and
hhi=number of sampled students in school-hi.

4/ No adjustments were made for item non-response.

5/ A detailed discussion appears in Levinsohn, et.al. (1976).

2. Educational expectations, measured in the base-year and second follow-up, refers to expected level of educational attainment (4 point continuum).

3. Occupational goals is measured by eleven occupational classes designating the kind of work student would like to do (base-year) and at age 30 (follow-up).

4. Community of residence is measured by self-assessment responses of the size of the community (8 levels) where student lived as a high school senior. Metropolitan is defined as cities above 50,000 population and non-metropolitan as small towns below 50,000 population and farm and open country areas.

5. Ability is measured by scores on a composite index of summed results of tests in ability, vocabulary, reading, letter groups, and mathematics. Upper quartile of the index scores were coded 3, two middle quartiles 2, and lower quartile 1.

6. Socioeconomic status is operationalized as scores, collapsed into three SES groups, from a composite index based on father's education, mother's education, parent's income, father's occupation and household items.

7. Other measures are self-explanatory.

The present analysis was conducted using the weighted sample values, i.e., population estimates, thereby compensating for instrument non-response. Association between residential status and the measures of educational and occupational preferences at different time points is shown through cross-tabular presentations. Simultaneous controls of sex, ability, and socioeconomic status were introduced, and Goodman-Kruskal gamma (Wilson, 1974) was employed to assess the zero order and conditional associations.

Results

Data to assess the patterns of educational and occupational preferences among members of the High School Class of 1972 are presented in four tables. Tables 1, 2, and 3 are oriented primarily to the question of differences by residential status. Table 4 contains information pertaining to early adult behavior.

Bivariate distributions for the educational and occupational variables by two measures of residential status, sex, ability and SES appear in Table 1. Some of the major patterns at the bivariate level are:

1. The data show that each of the selected variables is associated with each measure of educational and occupational preferences.

2. Both educational aspirations and expectations vary by residential status, sex, ability and SES whereas the latter are positively associated with levels of educational preferences, and high level of educational preferences is associated with metropolitan status and male gender.

Table 1—Educational and occupational preferences of high school seniors in the class of 1972 by selected characteristics

Item	Met/Non-met residence		Community of Residence					SEX		ABILITY			SES		
	Non-met	Met	Rural or farm	Small town	Medium city	Large city	Very large city	Male	Female	Low	Medium	High	Low	Medium	High
Highest education aspired to as a H.S. senior															
Total No. (in thous.) 1/	1,001.9	1,067.3	436.2	565.7	416.6	381.7	269.1	1,026.4	1,074.8	[illegible]	956.3	736.8	428.4	1,083.9	587.0
								Percent							
High school only	7.2	5.2	8.3	6.3	5.9	5.6	3.6	5.1	7.3	15.2	6.6	2.1	10.5	6.7	2.3
Voc-tech. training	23.1	14.1	28.2	19.2	16.4	13.6	11.1	16.8	20.3	34.9	21.9	7.1	29.9	20.7	6.6
Jr. college	8.8	8.4	8.4	9.1	9.5	9.1	5.7	6.5	10.7	15.0	9.9	4.1	10.3	9.9	5.1
College	60.9	72.3	55.1	65.4	68.2	71.7	79.6	71.6	61.7	34.9	61.6	86.7	49.3	62.7	86.0
Highest education expected as a H.S. senior															
Total No. (in thous.) 1/	1,097.7	1,164.2	485.9	611.8	454.6	419.8	289.9	1,130.7	1,175.7	398.0	1,048.3	762.4	490.0	1,183.5	629.6
								Percent							
High school only	22.1	15.5	26.6	18.5	18.6	15.3	11.2	15.5	22.2	37.5	21.1	6.2	33.6	19.8	5.8
Voc-tech. training	21.6	14.6	25.6	18.4	16.5	14.7	11.5	17.4	18.6	29.0	20.9	8.6	24.7	20.6	8.0
Jr. college	11.6	13.8	10.3	12.4	14.7	14.8	11.0	11.5	14.2	13.2	15.5	8.1	11.3	15.0	9.8
College	44.7	56.1	37.5	50.7	50.2	55.2	66.3	55.6	45.0	20.3	42.5	77.1	30.4	44.6	76.4
Education expected 2 1/2 years following H.S.															
Total No. (in thous.) 1/	1,236.9	1,289.0	573.3	683.7	497.8	472.5	318.8	1,360.6	1,391.1	502.9	913.7	587.3	671.4	1,373.4	691.8
								Percent							
High school only	28.7	19.4	34.4	24.0	22.6	19.6	14.0	20.4	27.6	40.5	25.0	7.6	38.0	25.9	6.8
Voc-tech. training	24.8	20.8	26.5	23.4	23.5	20.3	17.3	22.7	23.2	32.4	24.6	10.3	29.6	25.1	12.1
Jr. college	11.1	13.3	11.0	11.1	13.2	13.9	12.7	11.5	12.8	10.4	14.6	11.0	9.9	13.3	12.1
College	35.4	46.5	28.1	41.5	40.7	46.2	56.0	45.4	36.4	16.7	35.8	71.1	22.5	35.7	69.0
Occupational goals as a H.S. senior															
Total No. (in thous.) 2/	1,121.3	1,198.2	492.0	629.4	473.2	429.0	296.0	1,135.6	1,224.3	422.9	1,073.7	763.0	[illegible]	1,223.1	637.2
								Percent							
Prof., technical	48.0	56.1	41.8	52.8	53.0	56.4	61.1	50.6	53.4	28.2	47.2	73.1	37.4	49.0	69.2
Mgs., adms., proptrs.	4.8	5.1	4.2	5.3	4.9	5.4	4.9	8.2	1.8	4.7	5.3	4.6	3.7	4.5	6.7
Sales	2.5	3.5	2.4	2.6	3.5	3.3	3.6	2.7	3.3	3.8	3.4	1.9	3.3	3.2	2.5
Clerical	14.3	13.7	15.4	13.5	14.3	14.8	11.1	1.9	25.5	22.2	16.2	6.0	21.4	15.4	6.2
Craftsmen	8.7	6.4	10.5	7.4	7.3	5.6	6.1	15.1	0.5	12.7	8.4	3.5	9.3	8.3	4.6
Operatives	2.8	1.9	3.4	2.3	2.6	1.4	1.4	3.9	0.8	4.0	2.5	1.2	3.6	2.5	0.9
Laborers, except farm	2.8	2.2	3.7	2.1	2.5	1.8	2.2	4.9	0.3	4.5	2.7	1.1	3.2	2.6	1.7
Farm owners, mgrs.	2.5	0.8	4.2	1.1	0.6	1.2	0.6	2.7	0.6	1.7	1.8	1.1	1.6	2.0	0.9
Service workers	7.1	5.8	7.2	6.9	6.6	5.0	5.5	5.7	7.1	9.7	7.1	3.6	9.0	7.0	3.5
Homemakers	3.7	2.5	4.4	3.2	2.8	3.1	1.4	0.2	5.9	5.2	3.2	1.8	4.2	3.2	2.1
Military	2.8	2.0	2.8	2.8	1.9	2.0	2.1	4.1	0.8	3.3	2.2	2.1	3.3	2.3	1.7
Occupational goals 2 1/2 years following H.S.															
Total No. (in thous.) 2/	1,250.4	1,280.2	571.1	679.4	498.4	465.2	316.7	1,361.0	1,375.0	501.3	905.3	586.6	668.5	1,364.8	686.4
								Percent							
Prof., technical	37.2	47.3	30.9	42.2	42.9	47.8	53.4	42.9	41.3	22.6	39.2	64.7	29.5	38.7	61.4
Mgs., adms., proptrs.	9.5	11.3	9.3	9.7	10.7	11.1	12.6	16.3	4.7	8.9	11.6	10.3	7.4	10.9	12.6
Sales	1.6	1.9	1.4	1.5	1.8	1.8	2.1	1.8	1.6	1.5	2.0	1.5	1.5	1.8	1.6
Clerical	10.3	10.3	10.3	10.3	11.4	10.6	8.2	1.6	18.8	14.6	11.6	4.7	14.6	11.0	4.4
Craftsmen	9.8	7.4	10.4	9.2	8.5	7.0	6.3	16.6	0.8	14.1	8.5	3.7	10.6	9.8	4.5
Operatives	4.7	2.2	5.9	3.7	2.6	2.0	1.8	5.7	1.3	6.4	3.2	1.0	6.0	3.4	1.2
Laborers, except farm	3.5	1.7	4.3	2.9	2.0	1.6	1.4	4.9	0.3	5.5	2.4	0.6	4.5	2.6	0.8
Farm owners, mgrs.	3.1	0.8	5.4	1.2	0.9	0.8	0.6	3.3	0.7	2.4	1.9	1.4	2.0	2.4	1.2
Service workers	4.2	4.1	4.0	4.4	5.0	3.7	3.4	4.7	3.6	5.9	4.3	2.2	5.1	4.4	2.6
Homemakers	15.1	11.8	17.0	13.6	12.7	12.6	9.3	0.1	26.6	17.1	14.3	8.4	17.5	14.0	8.3
Military	1.2	1.2	1.1	1.3	1.5	1.0	0.9	2.1	0.3	1.0	1.0	1.5	1.3	1.0	1.4

1/ Excludes population estimates associated with missing observations due to item non-response and routing errors.

2/ Excludes population estimates associated with cases who indicated a 'no work' preference and with missing observations due to item non-response or routing errors.

3. In the case of occupational preferences, the associations are less clear. The tendency toward projected professional occupations is associated with levels of ability and SES. On the other hand, associations of residential status and sex with the occupational variables appear to be slight. When residential status is measured on the five point continuum, differences between rural/farm and non-rural/farm youth who express a preference for the higher status occupations are more pronounced than for the metropolitan classification. Differences between males and females preferring professional occupations are very slight, and a shift occurs in proportions at the second time period. However, the data still show a tendency toward traditional sex-role occupations for both males and females.

4. It is interesting to note that the goal deflection between educational aspirations and expectations occurs at about the same rate between categories for each of the variables. Furthermore, the percent change between time periods in expectations for college is at similar levels, particularly for residential status and sex.

Residential Differences in Educational Preferences

Table 2 shows the distributions for educational aspirations and expectations with sex, ability and SES controlled. It is important to note that the bivariate associations (value of gamma) between all three measures of the educational variables and residential status are similarly weak, i.e., < .30. However, the introduction of controls for sex, ability, and SES partial-out some of the association, although the conditional effects differ for males and females.

For males, the same general pattern occurs for all three educational variables. The association between residential status and educational preferences increases when SES is low and when SES is middle but ability is low. The strongest association (gamma = .55) is in the low status, high ability category where non-metropolitan males show a stronger tendency than metropolitan males to aspire and expect vocational technical or or junior college training. One unexpected association appears for educational aspirations of high status, high ability males. The low-moderate association (gamma = .41) may be a statistical artifact due to the lack of variation in the distribution.

For females, the patterns are more diverse. Associations partial-out or decrease between residential status and aspirations and expectations as a senior except for low status, high ability females, medium status, low ability females, and low ability high status females. Expectations at 2 1/2 years after high school are tempered by the SES and ability variables except for low SES and low ability females (where non-metropolitan females expect to attain less education than metropolitan females. Also, a slight increase in the conditional association occurs for low ability medium SES females.

Table 3—Educational preferences and goals at two time periods of high school seniors in the class of 1972 by residence, sex, ability and socioeconomic status

Item	Low SES						Medium SES						High SES					
	Low ability		Med. ability		High ability		Low ability		Med. ability		High ability		Low ability		Med. ability		High ability	
	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met
Educational aspired to as a H.S. senior																		
MALES																		
Total No. (in thous.) 1/	32.6	23.8	33.4	31.1	24.0	12.5	42.5	33.9	135.0	120.3	73.5	85.6	8.1	9.8	43.3	74.6	57.1	121.3
									Percent									
High school only	20.8	15.1	7.8	3.1	2.6	1.2	15.1	6.9	5.8	6.4	3.0	1.3	4.8	4.9	1.0	4.1	1.9	0.8
Voc-tech. training	40.5	30.8	34.1	23.4	17.7	7.1	44.1	29.1	26.1	16.0	6.6	5.6	18.4	24.7	12.3	8.3	1.9	0.4
Jr. college	11.0	9.5	8.0	6.0	10.5	2.1	14.5	15.9	6.7	8.1	4.5	3.1	11.8	7.9	7.6	4.8	1.9	1.3
College	27.7	44.6	50.1	67.5	69.2	89.6	26.3	48.1	61.4	69.5	85.9	90.0	65.0	62.5	79.1	82.8	94.3	97.5
Conditional Gamma	.25		.32		.55		.38		.16		.19		-.07		.09		.41	
FEMALES																		
Total No. (in thous.) 1/	39.5	29.3	71.9	41.0	29.1	11.9	33:4	35.9	139.6	136.3	96.5	86.7	5.9	11.1	36.0	60.5	49.6	93.1
									Percent									
High school only	21.8	13.6	9.8	9.8	7.6	2.2	20.0	12.3	8.1	8.5	3.1	4.0	19.2	13.0	3.2	3.9	.9	.4
Voc-tech. training	39.9	35.3	37.6	26.0	15.0	11.4	41.2	26.7	27.5	22.3	14.6	12.2	31.9	13.1	9.2	8.7	4.6	3.2
Jr. college	13.6	18.9	10.8	12.2	6.4	2.5	14.9	18.1	13.1	14.5	7.3	7.0	19.5	23.2	9.1	11.9	1.1	3.1
College	24.7	32.2	41.8	52.0	71.0	83.9	23.8	42.9	51.3	54.7	75.0	76.8	29.4	50.7	78.5	75.5	93.4	93.3
Conditional Gamma	.20		.17		.34		.33		.06		.04		.36		-.07		.00	
Zero order & partial gammas							Zero order gamma = .24 Partial gamma = .13											
Education expected as a H.S. senior																		
MALES																		
Total No. (in thous.) 1/	41.0	30.6	61.7	35.7	26.4	13.2	34.0	41.1	145.8	129.7	76.1	88.7	10.1	11.4	47.6	78.5	58.7	119.1
									Percent									
High school only	47.1	36.7	34.6	19.8	14.0	11.1	37.8	25.3	16.8	16.5	6.5	4.2	17.7	23.9	5.9	7.5	1.1	.7
Voc-tech. training	30.9	23.0	28.9	24.2	23.7	11.3	34.2	26.7	25.4	17.2	12.1	9.2	34.4	24.0	15.0	9.2	2.1	2.8
Jr. college	6.1	13.7	9.7	13.2	10.6	7.8	10.9	20.5	15.3	17.2	6.1	10.6	14.5	14.8	9.6	13.9	3.4	5.0
College	15.9	26.6	26.8	42.8	51.7	69.8	17.1	27.5	42.5	49.1	75.3	76.0	33.4	37.3	69.5	69.4	93.4	91.5
Conditional Gamma	.24		.31		.30		.28		.11		.05		.01		.01		-.13	
FEMALES																		
Total No. (in thous.) 1/	49.0	35.8	79.6	44.4	28.5	11.5	39.7	45.5	150.1	152.6	96.3	89.2	90.0	11.4	39.4	85.7	51.3	98.1
									Percent									
High school only	46.2	40.7	39.1	35.7	13.1	15.7	47.8	31.1	26.0	24.2	12.1	12.0	33.1	26.2	9.8	9.4	3.3	2.2
Voc-tech. training	29.4	25.8	29.2	19.7	19.7	3.8	31.6	29.2	26.3	21.7	13.5	12.1	22.2	13.2	10.2	12.1	5.3	3.6
Jr. college	9.7	13.9	11.0	12.3	11.8	8.3	9.8	16.9	16.4	19.5	11.7	13.1	23.6	21.6	17.3	18.4	6.1	4.8
College	14.7	19.6	20.7	32.3	55.4	72.2	10.8	22.8	31.3	34.6	62.7	62.8	21.1	39.0	62.7	60.1	85.3	89.4
Conditional Gamma	.13		.15		.26		.33		.07		.01		.25		-.04		.18	
Zero order & partial gammas							Zero order gamma = .21 Partial gamma = .10											
Education expected 2 1/2 years following H.S.																		
MALES																		
Total No. (in thous.) 1/	62.1	40.9	52.9	32.1	18.1	9.2	63.6	53.5	122.7	117.6	55.7	66.7	12.5	14.0	38.8	73.0	47.2	93.4
									Percent									
High school only	48.5	35.6	36.7	20.7	18.1	12.1	43.1	30.8	25.3	19.3	8.7	8.1	22.7	17.5	7.2	5.6	1.5	2.1
Voc-tech. training	32.7	33.6	31.6	23.8	23.0	17.4	38.0	34.7	28.1	23.9	9.8	11.1	20.4	23.5	17.2	16.9	3.5	3.2
Jr. college	5.2	12.3	9.9	15.5	16.1	14.6	9.6	11.9	13.0	15.3	10.6	14.0	19.7	18.8	12.8	13.1	11.2	5.5
College	13.6	18.5	21.8	40.0	42.8	55.9	9.5	22.6	33.6	41.5	70.9	66.8	37.2	40.2	62.8	64.4	83.5	87.2
Conditional Gamma	.23		.36		.22		.28		.15		-.07		.07		.04		.12	
FEMALES																		
Total No. (in thous.) 1/	62.5	47.3	70.1	41.2	20.8	9.6	48.6	56.4	125.3	127.9	70.9	67.5	9.1	12.1	36.6	58.2	41.8	81.0
									Percent									
High school only	53.6	38.4	47.5	38.1	14.0	14.8	49.0	36.4	32.0	29.7	13.0	14.8	31.6	28.0	20.5	10.0	4.9	1.9
Voc-tech. training	28.6	32.7	29.3	27.1	23.2	19.3	30.5	34.2	27.8	23.3	15.5	15.3	29.8	24.8	18.6	19.8	5.3	5.8
Jr. college	6.9	10.6	9.0	11.0	11.0	10.2	10.4	11.6	14.8	17.9	12.9	14.8	11.1	19.0	19.5	19.7	5.9	9.3
College	10.9	18.3	14.2	23.8	31.6	55.7	10.1	17.8	25.4	29.1	58.6	55.1	27.5	28.2	51.4	50.4	80.9	83.0
Conditional Gamma	.26		.20		.05		.22		.08		.06		.08		.01		.08	
Zero order & partial gammas							Zero order gamma = .21 Partial gamma = .12											

1/ Excludes population estimates associated with missing observations due to item non-response and routing errors.

Table 3--Occupational preferences at two time periods of high school seniors in the class of 1972 by residence, sex, ability and socioeconomic status

Occupational goals	Low SES						Medium SES						High SES					
	Low ability		Med. ability		High ability		Low ability		Med. ability		High ability		Low ability		Med. ability		High ability	
	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met	Non-met	Met
Occupational goals as a H.S. senior																		
MALES																		
Total No. (in thous.) 1/	42.1	29.1	59.1	36.1	24.7	12.4	56.6	40.3	152.2	132.6	73.4	89.5	10.5	13.4	44.5	78.7	57.6	118.2
										Percent								
Prof., technical	15.6	30.9	33.4	52.2	58.4	71.2	21.9	28.3	40.3	44.9	64.7	68.3	39.3	38.9	56.7	56.6	74.7	75.8
Mgs., adms., proptrs.	7.3	5.2	6.8	7.2	3.4	7.9	8.0	10.7	7.4	8.8	6.5	5.4	16.9	17.7	12.5	12.7	6.8	9.4
Sales	1.4	3.8	1.9	2.1	2.5	3.2	.9	3.1	2.8	5.2	2.5	3.6	2.1	6.7	3.0	2.5	1.7	1.1
Clerical	5.3	6.0	2.5	1.1	.3	.0	3.9	2.2	1.6	2.1	.6	1.3	.0	2.7	1.6	1.3	.0	1.2
Craftsmen	27.7	21.8	23.2	13.6	17.0	8.4	29.7	30.4	21.3	15.5	5.4	7.6	17.6	8.8	8.6	13.8	5.6	3.5
Operatives	10.4	8.6	8.2	4.5	3.4	.7	7.8	5.4	4.6	4.6	2.5	2.5	4.9	2.3	3.2	.9	1.4	1.1
Laborers, except farm	12.6	6.0	7.0	6.4	3.2	1.2	10.4	7.4	5.3	4.7	2.6	3.0	2.3	5.8	5.3	5.2	1.9	1.2
Farm owners, mgrs.	6.6	.0	5.5	.0	2.2	.0	5.0	1.8	5.4	2.2	4.8	.7	4.8	2.2	1.3	1.1	1.7	.7
Service workers	6.2	11.0	4.5	7.9	6.5	3.0	7.5	7.7	7.0	8.4	4.5	4.1	5.2	8.0	4.8	3.0	2.6	3.1
Homemakers	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	.0	.0	.0	.0	.0
Military	6.7	6.7	7.0	5.0	3.1	4.4	4.9	3.0	4.3	3.6	3.9	3.5	4.2	6.9	3.0	2.0	3.6	2.9
Conditional Gamma	-.19		-.24		-.27		-.16		-.09		-.04		-.01		-.01		-.04	
FEMALES																		
Total No. (in thous.) 1/	50.3	41.7	79.0	46.1	28.1	12.8	47.4	53.4	157.5	157.0	99.3	89.6	90.0	13.0	41.5	70.9	51.0	98.4
										Percent								
Prof., technical	23.5	33.9	33.3	41.1	62.6	67.4	24.3	41.6	44.7	49.4	70.7	69.5	41.1	41.6	67.7	64.5	84.9	83.5
Mgs., adms., proptrs.	.5	.4	2.1	1.4	3.5	.0	1.7	.4	1.9	2.1	2.3	2.1	3.0	1.0	3.9	1.5	2.5	2.0
Sales	6.0	4.9	3.6	5.8	2.2	2.5	4.2	5.5	2.5	3.6	.5	2.9	5.2	6.0	4.9	3.7	1.6	1.3
Clerical	38.0	40.0	37.5	36.0	17.7	19.2	36.5	37.4	32.6	30.1	13.6	14.9	28.5	31.9	13.4	17.3	5.2	5.8
Craftsmen	1.3	.4	.0	.6	.0	.0	.3	.0	.6	.3	.2	.8	2.2	.0	.3	.0	1.7	1.5
Operatives	1.0	2.0	.5	.5	.0	.8	.9	.4	1.0	1.1	.9	.8	.0	.0	.7	.4	.0	.5
Laborers, except farm	.9	.9	.2	.0	.5	.0	.6	.0	.3	.6	.2	.0	.0	2.4	.0	.0	.5	.0
Farm owners, mgrs.	.1	.0	.9	.0	.3	.0	.0	.2	.7	.8	.4	1.4	.0	.0	.9	.2	.7	.0
Service workers	14.2	9.9	13.3	8.8	4.6	7.7	14.4	7.8	8.5	6.0	4.8	4.0	11.0	8.8	4.7	4.3	1.0	2.1
Homemakers	13.0	6.8	6.8	5.5	8.8	2.4	15.1	6.0	6.7	5.4	4.9	2.5	8.0	8.3	3.2	7.8	2.1	2.8
Military	1.5	.8	1.4	.3	.3	.0	2.0	.7	.5	.6	1.5	1.1	1.0	.0	.3	.3	.0	.5
Conditional Gamma	-.21		-.17		-.10		-.35		-.10		-.00		-.02		.09		.06	
Zero order & partial gammas:							Zero order gamma = -.16 Partial gamma = -.09											
Occupational goals 2 1/2 years following H.S.																		
MALES																		
Total No. (in thous.) 1/	62.5	41.2	52.7	33.4	18.4	9.4	62.5	53.6	123.7	118.1	55.9	65.2	12.6	14.5	38.4	89.1	47.2	92.8
										Percent								
Prof., technical	16.7	27.6	26.2	48.9	46.6	67.7	13.1	26.8	35.0	39.3	61.0	60.4	31.2	40.6	32.1	35.3	71.5	71.0
Mgs., adms., proptrs.	9.4	13.6	13.5	10.8	10.2	9.4	14.2	17.1	17.3	21.1	16.8	16.2	20.0	12.0	21.3	23.4	13.8	16.4
Sales	1.0	2.2	1.6	.9	1.6	3.2	1.1	2.6	.9	3.7	1.5	2.1	4.2	.6	3.3	1.2	1.4	1.1
Clerical	3.9	8.5	1.5	4.2	.0	.0	1.9	2.2	1.7	1.1	.8	1.7	1.5	2.7	.4	.4	.4	.5
Craftsmen	25.5	23.4	23.0	15.2	22.3	11.6	29.3	31.0	19.5	17.4	6.6	7.4	26.4	13.7	9.9	9.9	5.9	3.7
Operatives	13.8	6.4	11.1	6.6	7.8	1.6	11.5	6.8	7.1	3.8	2.9	1.6	2.9	12.5	3.1	1.9	.7	.2
Laborers, except farm	14.6	7.7	10.3	6.0	2.5	.0	14.7	5.0	4.6	4.4	1.6	1.1	3.4	9.3	2.7	.6	.9	.9
Farm owners, mgrs.	6.3	1.9	4.4	.5	4.3	4.1	6.5	.8	7.5	1.2	3.8	1.1	5.8	.0	3.0	.8	1.0	.6
Service workers	5.8	5.7	4.1	6.8	2.3	.0	6.0	6.9	5.3	6.3	2.2	5.8	4.6	6.0	2.1	4.4	1.3	2.3
Homemakers	.3	.4	.6	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
Military	2.7	2.6	3.7	.2	2.3	2.4	1.2	.8	1.1	1.7	2.8	2.6	.0	3.6	2.1	2.0	2.7	3.3
Conditional Gamma	-.27		-.32		-.37		-.32		-.12		.01		.00		-.07		.00	
FEMALES																		
Total No. (in thous.) 1/	62.2	47.5	68.7	39.9	21.1	10.0	47.4	53.8	124.9	123.4	71.9	67.8	9.1	11.4	35.9	58.2	40.8	80.3
										Percent								
Prof., technical	16.8	26.3	23.9	34.9	44.5	58.8	17.6	28.0	35.0	37.4	60.3	55.6	32.0	36.1	52.5	54.6	75.0	74.7
Mgs., adms., proptrs.	3.0	2.8	2.6	5.0	4.9	5.4	4.6	4.4	4.0	5.6	4.9	5.7	.0	4.4	5.9	7.2	4.5	5.9
Sales	1.4	1.1	1.2	3.8	1.5	.0	1.1	1.2	1.5	2.0	1.7	2.8	.0	1.6	1.2	2.0	.9	.7
Clerical	22.5	27.4	26.7	26.4	18.7	13.1	26.3	30.7	21.7	22.1	10.7	12.5	22.1	23.6	14.5	12.5	2.8	3.3
Craftsmen	.5	.8	.6	1.1	2.5	.0	.6	.7	.2	.9	.3	.3	1.4	1.4	.8	.0	.4	1.0
Operatives	4.9	1.5	3.0	1.7	1.4	.0	2.6	1.5	.4	1.0	.7	.0	.0	1.2	.0	.3	.0	.2
Laborers, except farm	.5	.0	1.0	.7	.0	.0	1.3	.1	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0
Farm owners, mgrs.	.9	.7	.3	.0	1.3	.0	.8	.6	1.0	.1	.7	.8	6.2	.0	.0	.1	.5	1.5
Service workers	8.2	6.8	5.8	3.1	3.2	4.6	5.8	3.9	3.0	3.9	1.5	1.5	7.6	1.9	5.0	.9	1.1	1.0
Homemakers	41.0	31.8	34.5	23.3	22.0	18.1	39.3	28.9	32.8	26.8	19.0	20.8	30.7	29.8	19.3	22.0	14.8	11.5
Military	.3	.8	.4	.0	.0	.0	.0	.0	.2	.0	.2	.0	.0	.0	.8	.4	.0	.2
Conditional Gamma	-.19		-.25		-.20		-.22		-.08		.07		-.11		-.03		-.01	
Zero order & partial gammas:							Zero order gamma = -.17 Partial gamma = -.12											

1/ Excludes population estimates associated with cases who indicated a 'no work' preference and with missing observations due to item non-response or routing errors.

Residential Differences in Occupational Preferences

Data pertaining to occupational preferences and residential status are presented in Table 3. The bivariate statistic shows a weak association < .20 between occupational preferences and residence. However, patterns of male preferences toward occupation are the same as patterns regarding education. Associations between residence and occupational preferences are increased for low SES and low ability, medium SES males but partial-out in the other conditional distributions. Occupational patterns for females parallel the results for males with one notable exception. Residential differences in occupational goals for females decrease when SES is low and ability is high.

Early Adult Behaviors

The preceding results have dealt with attitudinal aspects of the process toward adult status attainment. Consideration is now given to the behaviors and activities of the members of the 1972 High School Class in early years following graduation. Population estimates for reported activity states in October, 1974, appear in Table 4. Estimates are shown by residential status and sex.

Of the approximate population of 3 million, 36 percent were engaged in some form of post-secondary education, 60 percent were working, full or part-time, 5/ 13 percent were homemakers, and the proportion in the military or looking for work was each around 5 percent.

Differences between non-metropolitan and metropolitan youth in activities were relatively slight. More non-metropolitan youth were working and slightly fewer were in school compared to metropolitan youth. Also, the percentage of nonmetropolitan youth who were homemakers (suggesting earlier marriages by non-metropolitan females) was higher than for metropolitan youth.

Males and females also differed to some extent in their activity status. More metropolitan males and females were in an educational program than non-metropolitan males and females. Non-metropolitan males tended to be in vocational-technical education to a greater degree than metropolitan males or either group of females. More non-metropolitan males reported that they were working than metropolitan males, but the reverse occurred for females.

The incongruence between educational aspirations during the senior year and educational activity over two years later is markedly high. The agreement between expectations at either time period is also low; however, the disparity in four year college projections and activity is less for non-metropolitan than for metropolitan youth.

5/ Multiple activities are possible.

Table 4--Activities of high school seniors in the class of 1972 in October, 1974, by sex and residential status

Activity 1/	Residential status			Males		Females	
	Total	Non-met	Met	Non-met	Met	Non-met	Met
Number (thous.)	3,036.6	1,366.5	1,670.1	757,617	754,592	753,032	771,325
				Percent			
In school	36.5	34.9	37.8	32.4	45.7	30.7	37.3
Voc. tech.	3.6	4.3	3.1	4.1	3.5	3.7	3.3
2 yr. college	6.7	5.4	7.7	5.0	9.6	4.9	7.1
4 yr. college	25.8	24.8	26.7	23.0	32.0	21.9	26.4
Other	.4	.4	.4	.4	.5	.3	.4
Working full and part-time	63.2	69.7	57.9	70.2	66.7	55.9	60.0
Looking for work	5.6	6.8	4.7	6.0	5.5	6.3	4.8
Homemaker	13.3	17.3	10.0	.7	.4	30.7	21.4
Military	4.3	5.5	3.4	9.0	6.9	.9	.7

1/ Categories are not mutually exclusive since it was possible to be involved in multiple activities.

Discussion

In sum, several conclusions may be drawn from the results. The major conclusion is that residential differences in educational and occupational preferences are slight and tend to involve population subsets. For example, the results showed that non-metropolitan males from low socioeconomic backgrounds and those from low-middle class backgrounds who also were of low ability had lower educational and occupational preferences than their metropolitan counterparts. Possible reasons for rural-urban differences for lower SES males may be differences in socialization in the family, school and community setting whereby non-metropolitan males are less aware of the full range of educational and occupational possibilities than males living in a metropolitan setting. Historically, vocational education has been more heavily emphasized in rural schools than urban schools. One could also speculate that orientation ion toward work at an early age for males is part of the rural experience, particularly among farm-reared boys and has an effect on lowering educational and subsequent occupational goals.

A second conclusion suggested by the results is that occupational orientations of 1972 H.S. Seniors are not only incongruent with their early adult behaviors but are vastly inconsistent with the realities of job market possibilities. More than 1/3 of the 1972 students expected to be employed in professional and related jobs by age 30. This compares to only 15 percent of the civilian labor force and 12 percent of employed persons who were actually working in professional and related jobs in 1970.

One implication of the research is that educators and governmental decision-makers need to focus more attention on the whole issue of career development. It is to the benefits of both young future American citizens and non-metropolitan and metropolitan communities to stress programs and educational practices which will foster more realistic decisions concerning education and vocation.

REFERENCES

Bailey, J.P.
1976 National Longitudinal Study of the High School Class of 1972: Second Follow-up Survey Final Methodological Report. Research Triangle Park, North Carolina: Research Triangle Institute.

Blau, Peter M. and Otis Dudley Duncan
1967 The American Occupational Structure. New York: Wiley.

Boyle, Richard P.
1966 "Community Influence on College Aspirations: An Empirical Evaluation of Explanatory Factors," Rural Sociology, 31 (Sept.): 277-292.

Burchinal, Lee G.
1961 "Differences in Educational and Occupational Aspirations of Farm, Small-Town and City Boys," Rural Sociology, XXVI (June): 107-121.

Duncan, Otis Dudley, David L. Featherman, and Beverly Duncan
1972 Socioeconomic Background and Achievement. New York: Seminar Press.

Featherman, David L.
1971 "Residential Background and Socioeconomic Achievement in Metropolitan Stratification Systems," Rural Sociology, 36 (June): 107-123.

Feller, Barbara A.
1974 "Rural-Urban Differences in Scholastic Performance in College," Proceedings, Rural Sociology Section, Southern Association of Agricultural Scientists.

Flinn, William L. and Robert D. Munoz
1977 "Changes in the Educational Levels of Farmers and Farm Managers," unpublished paper prepared for Economic Development Division, ESCS, U.S. Department of Agriculture.

Grigg, Charles M. and Russell Middleton
1960 "Community of Orientation and Occupational Aspirations of Ninth Grade Students," Social Forces, XXXVIII (May): 303-308.

Haller, Archibald O.
1960 "The Occupational Achievement Process of Farm-Reared Youth in Urban-Industrial Society," Rural Sociology, 25: 321-333.

Haller, Archibald O. and William H. Sewell
1957 "Farm Residence and Levels of Educational and Occupational Aspirations," American Journal of Sociology, LXII (January): 407-411.

Kuvlesky, William P. and David H. Reynolds
1970 Occupational Aspirations and Expectations of Youth: A Bibliography of Research Literature I. Texas A&M University, Department of Agriculture, Economics and Sociology, DTR 70-4, (December, 1970).

Levinsohn, J.R., et. al.
1976 National Longitudinal Study of the High School Class of 1972: Base Year, First, and Second Follow-up Data File Users Manual. Research Triangle Park, North Carolina: Research Triangle Institute.

Lipsett, Seymour M.
1955 "Social Mobility and Urbanization," Rural Sociology, 20: 220-228.

National Center for Educational Statistics
1973 Digest of Educational Statistics, 1972. Washington, D.C.: U.S. Government Printing Office.

Sewell, William H.
1964 "Community of Residence and College Plans," American Sociological Review, 29 (February): 24-38.

Sewell, William H., et. al.
1970 "The Educational And Early Occupational Status Attainment Process: Replication and Revision," American Sociological Review, 35 (December): 1014-1027.

Sewell, William H. and Alan M. Orenstein
1965 "Community of Residence and Occupational Choice," American Journal of Sociology, LXX (March): 551-563.

Wilson, Thomas P.
1974 "Measures of Association for Bivariate Ordinal Hypotheses," H. M. Blalock, Jr. (Ed.), Measurement in the Social Sciences, Chicago, Illinois.

METHODOLOGY

"An Inventory of Forest Fire Prevention 'Education' Programs in the South: A Baseline for Evaluation." G. Richard Wetherill, U.S. Forest Service, SFES, Starkvill, MS.

"An Empirical Evaluation of Four Missing Value Procedures." John K. Thomas, Edward T. Ulbricht, and John T. Womack, Texas A&M University.

AN INVENTORY OF FOREST FIRE PREVENTION EDUCATION PROGRAMS IN THE SOUTH: A BASELINE FOR EVALUATION

by
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Although there are many documented forest fire prevention efforts, and all organizations charged with keeping forests safe from fires engage in some form of prevention activity, educational prevention measures receive little attention. Forest Fire prevention education encompasses a broad spectrum of approaches and activities ranging from mass media education to personal contact. These two extremes have received the most attention in program documentation. Comparatively little attention has been given to educational programs using methods between the two extremes that present the fire prevention message in intensive blocks of time to groups of people in all settings (school classrooms, community organizations, workshops).

Researchers studying the underlying reasons for and causes of forest fires indicate that one way to reduce the number of incendiary fires in the South is by resocialization or changing the patterns of early socialization (Bertrand and Baird, 1975). Many research studies suggest that educational programs can accomplish this necessary resocialization and reduce the number of forest fires. While mass media approaches offer the chance of reaching the largest number of people with fire prevention messages, the personal contact approach is probably the most direct medium for transmitting the fire prevention message (Doolittle et al., 1976). Although less has been written on mid-range educational programs than on the other two approaches, mid-range programs have a great potential for reducing the forest fire occurrence. This indirect approach should combine the efficiency of mass media with the effectiveness of personal contact.

For mid-range educational programs to have the greatest impact upon their target populations, systematic program evaluation is a necessity to provide program personnel with information about the strengths and weaknesses of programs (Weiss, 1972). Systematic evaluations yield results pointing to program improvement alternatives.

Evaluation must include several sequential steps: Program Description, Criteria Formulation, Evidence Gathering, Judgement Making, and Dissemination (Wetherill, 1977). All of the above phases are necessary to evaluation. The first major phase of an evaluation is describing or documenting the program. But evaluation of mid-range educational programs for forest fire prevention has been limited because programs have never been documented. The objective of the inventory described here was to document mid-range educational prevention programs in the South, especially state and national forest programs, using a Program Description questionnaire.

Lack of Documentation

Since its beginning in 1936, Fire Management Notes has printed 118 articles (6% of the total number of articles) dealing with fire prevention. Of these 118 prevention articles only 21 (19%) could be characterized (in the broadest sense) as dealing with mid-range educational programs. These articles were grouped into five major categories or approaches: gimmicks and displays (7 articles); classroom teaching of children (6 articles); organizing community-level action organizations (5 articles); demonstrations (2 articles); and public information contactor approaches (1 article). These heuristic categories served as a basis for classifying programs reported in the inventory.

Few detailed program documentations are available [1] even though much background research into the reasons for and causes of incendiary fires in the South has been conducted (Bertrand and Baird, 1975). Such basic works as those of Chandler and Davis (1960), Folkman (1963), Hansbrough (1961), Christiansen and others (1969), Griessman and Bertrand (1969), Jones and others (1965), and Dickerson and Klein (1971) have provided a knowledge base for conducting forest fire prevention education.

Methods

A Program Description questionnaire was developed to gather critical information on existing fire prevention programs and was sent to the thirteen national forest units through the Region 8 office in Atlanta and to all thirteen state forestry agencies in the South. Completed descriptions were returned to the Southern Forest Experiment Station in Starkville, Mississippi. While not every unit responded, the result was encouraging, because the returns yielded a total of 63 usable descriptions of programs.

The data from the Program Descriptions were tabulated by frequency and percent for national forests and state forestry agencies (Table 1).

Target groups. National forest programs were oriented more toward student groups (69%) than state programs (52%), though both were heavily oriented toward the kindergarten through high school age group. States had a larger percentage of programs directed at adult audiences than national forests.

Number of persons reached by program last year. State programs reflected much higher coverage than national forest programs, probably because Program Descriptions sent to state programs went to state headquarters, while those sent to national forests went to ranger districts. Number of persons reached ranged from 35 to 45,000 for national forests and 15 to 1,750,000 for states. State Program Descriptions showed larger numbers because many of their programs were directed at large audiences (programs using devices such as floats and fair displays.

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[1] Three studies of note concerning mid-range prevention education programs are:

Roy A. Christiansen and Ben E. Dickerson. 1973. Field test of a forest fire prevention knowledge instrument among selected fifth grade students. Unpubl. Final Rep. USDA For. Serv., South. For. Exp. Stn., Starkville, MS.

William S. Folkman and Jean Taylor. 1974. Fire prevention in California's Riverside County Headstart Project: an evaluation. USDA For. Serv., Pac. Southwest For. and Range Exp. Stn., Berkeley, CA.

Frank H. Gladen and Helen S. Corkin. 1970. A study of the effectiveness of specific teaching of conservation to children in selected schools of Butte County, California. Cal. J. Educ. Resour. 21(4):152-169.

TABLE 1

Program Categories

Item	National Forest Programs (N=26) Number	National Forest Programs (N=26) Percent*	State Programs (N=37) Number	State Programs (N=37) Percent*
TARGET GROUPS				
School children in grades K-6	12	46	13	35
Jr. High/High School students (grades 7-12)	2	8	3	8
Combinations of the above	5	19	2	5
Adults	2	8	12	32
Other	1	4	0	0
All Ages	4	15	7	20
NUMBER OF PERSONS REACHED BY PROGRAM LAST YEAR:				
0-250	6	23	4	11
251-500	4	15	4	11
501-1000	3	12	2	5
1001-2500	6	23	1	3
2501-5000	2	8	3	8
more than 5000	5	19	19	51
NR & N/A	0	0	4	11
NUMBER OF PERSONNEL USED TO EXECUTE PROGRAM LAST YEAR:				
1-2	12	46	5	13
3-4	8	31	5	13
5 and over	5	19	18	49
Undeterminable from information given	1	4	8	22
Average no. of personnel per program	4		54	
PROGRAM LENGTH A (short-term, instructional programs)	(n=23)		(n=15)	
30 minutes or less	4	15	5	14
31-60 minutes	12	46	8	22
More than one hour	4	15	1	3
NR	1	4	1	3
Average duration of program	58 min.		47 min.	

TABLE 1 (Cont.)

Item	National Forest Programs (N=26) Number	National Forest Programs (N=26) Percent*	State Programs (N=37) Number	State Programs (N=37) Percent*
PROGRAM LENGTH B (displays and exhibits)				
	(n=3)		(n=15)	
less than one day	0	0	2	5
one day	0	0	2	5
two days to one week	2	8	2	5
more than one week	1	4	0	0
NR	0	0	6	16
Average duration of program	7 days		2 days	
PROGRAM LENGTH C (workshops, training)				
			(n=6)	
less than one day	0	0	2	5
one day	0	0	0	0
two days to one week	0	0	2	5
more than one week	0	0	2	5
NR	0	0	0	0
Average duration of program	N/A		4 1/2 days	

Note: 2 (8%) NF programs and 4 (11%) state programs could not be classified as any of the three program lengths above.

Item	National Forest Programs (N=26) Number	National Forest Programs (N=26) Percent*	State Programs (N=37) Number	State Programs (N=37) Percent*
NUMBER OF YEARS PROGRAM HAS BEEN IN OPERATION:				
1-3	5	19	4	11
4-6	7	27	5	13
7-9	2	8	4	11
10-24	6	23	9	24
25 or more	0	0	14	38
NR & DK	6	23	1	3
Average number of years in operation	6 1/2		21 1/2	

TABLE 1 (Cont.)

Item	National Forest Programs (N=26)		State Programs (N=37)	
	Number	Percent*	Number	Percent*
DOLLARS BUDGETED TO PROGRAM LAST YEAR:				
$0	3	12	11	30
$1-250	5	19	4	11
$251-500	3	12	2	5
$501-1000	6	23	4	11
$1001-2500	3	12	3	8
$2501-5000	4	15	1	3
more than $5000	1	4	4	11
NR	1	4	8 [1]	22
Average amount per program	$1801		$1374	
PROGRAM COST (REPORTED) PER CONTACT:				
$0-.50	11	42	26	70
$.51-1.00	5	19	0	0
$1.01-1.50	1	4	0	0
$1.51-2.00	1	4	1	3
$2.01-2.50	3	12	0	0
$2.51-3.00	1	4	0	0
more than $3.00	3	12	0	0
NR	1	4	0	0
Average cost per contact	$1.23 [2]		$0.15 [2]	

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[1] Some states reported expenditures in person-year equivalents; these were counted as "no responses" since they were not comparable to other data.

[2] Costs are not comparable because states did not include the salary costs of program leaders.

TABLE 1 (Cont.)

Item	National Forest Programs (N=26) Number	National Forest Programs (N=26) Percent*	State Programs (N=37) Number	State Programs (N=37) Percent*
EDUCATIONAL MATERIALS USED:				
Films, Slides, Handouts, and Posters	13	50	20	54
Films, Slides, Handouts, and Posters with Smokey Bear and/or Woodsy Owl	8	31	2	5
Personalized letters and cards	2	8	0	0
Forestry materials and hardware	0	0	5	13
Displays, Floats	0	0	5	13
Games & Contests	1	4	2	5
Open Forums and Workshops	2	8	2	5
NR	0	0	0	0
DO PEOPLE NEED SPECIAL TRAINING TO CONDUCT THE PROGRAM?				
YES	12	46	19	51
NO	14	54	18	49
IS THERE A WRITTEN PLAN FOR THE PROGRAM?				
YES	9	35	14	38
NO	17	65	23	62
HAS THE PROGRAM EVER BEEN EVALUATED?				
YES	1	4	5	13
NO	16	62	27	73
ONLY PLANNED	2	8	1	3
DON'T KNOW	7	27	3	8
NR	0	0	1	3
IS THE PROGRAM A SUCCESS?				
YES	22	85	35	95
NO	0	0	0	0
DON'T KNOW	4	15	2	5

*Totals may not equal 100% because of rounding off.

Number of personnel used to execute program. The larger geographical area covered by state agencies was again reflected in this category. Number of personnel ranged from 1-18 for national forests and 1-270 for states.

Program lengths. The categories of program length in Table 1 do not coincide with the program classifications given in Table 2. Table 1 categories provide a much broader scheme than the final program classification scheme, making it possible to compare program durations. National forest programs tended to take slightly longer to present than state programs of the same type. Only states offered long-term programs.

TABLE 2

PROGRAM CLASSIFICATIONS

Item	National Forest Programs (N=26)		State Programs (N=37)	
	Number	Percent	Number	Percent
Displays and gimmicks (fair exhibits, parade floats, contests, films)	4	15	11	30
School programs	19	73	11	30
Organizing community-level action groups	0	0	3	8
Demonstrations	0	0	4	11
Public information contactor	3	12	1	3
Open forums, workshops, and training programs	0	0	7	18

Number of years program has been in operation. The average state program had been going on more than three times longer than the average national forest program. National forest programs had been in operation 1 to 15 years and state programs 1 to 50 years. Many state programs had been operating more than 25 years, and six programs (16%) had been operating for more than 45 years.

Dollars budgeted to programs. On the average, states spent less money on programs than national forests. National forests reported expenditures of $0-$12,000 and states reported spending $0-$10,000 in spite of the fact that no program is cost-free.

Program cost per contact. Costs were determined by dividing the reported dollar amount budgeted to the program by the number of persons reached by the program. National forest programs cost more per contact than state programs. More state programs used displays and floats, whose cost is offset by the fact that they reach a large number of people (thousands, and in some cases, more than a million) for a fixed amount of money.

Educational materials used. National forest programs used more handout materials. National forest programs also made much more use of Smokey Bear and Woodsy Owl costumes, always in conjunction with handout materials, films, posters, and slides.

Training and written plans. Neither national forest nor state programs reported a need for special personnel training or written plans for the program. Few agencies had actually documented their plans, objectives, or methods.

Program evaluation. More state programs have been evaluated than national forest programs. For 27% of the national forest programs, respondents did not know whether their program had ever been evaluated. This is probably because, except for Mississippi, national forest programs reported from the field level, but state programs reported from the state office level. National forest personnel also tend to have shorter tenure than state personnel and are less likely to know about what has (or has not) been done.

Program success. According to the data received, not one national forest or state program was unsuccessful. However, respondents from national forests doubted the success of their programs more often.

Program Classification

The final classification scheme (Table 2) required one modification and one addition to the scheme applied to articles in *Fire Management Notes*. This was done to include open forums and workshops which were not covered in *Fire Management Notes*.

Gimmicks and displays. Most of the programs in this category were exhibits (at fairs, shopping malls or public meeting places) and parade floats, but contests and films also were included. A major problem in classifying such programs as "mid-range" is their nearness to the mass media approach.

School programs. Most programs (both national forest and state) were categorized as school programs. This category was modified by dropping the "children" label because many programs of this type listed their audience as being high school age.

Organizing community-level action groups. This category was originally constituted to include programs in which fire prevention personnel actively organized community groups to do the business of prevention. But no programs demonstrated the originally-conceived active involvement. Even when limitations were relaxed to accommodate more passive involvement with community groups by prevention personnel, there were only three state programs in the category.

Demonstrations. One kind of educational strategy is demonstrations in which participants in the educational experience can see or touch objects directly related to the subject being taught. A number of state programs used this strategy.

Public information contactor approaches. This category closely approaches the personal contact approach. It was, however, different enough from personal contact to warrant inclusion in the mid-range category because the programs operated in field settings such as visitor centers and combined some elements of classroom teaching, demonstrations, exhibits, and open forums with individual contact. This approach was used more often in national forests than in states.

Open forums, workshops, training programs. This category had to be added to accommodate such programs as fire training, summer camps, teachers' workshops, and environmental workshops. These are more difficult to organize and operate than most of the other approaches, but they have many potential benefits. States rely heavily on these programs to reach several different audiences (from children through adults).

Summary

State programs use a wider variety of approaches than national forest programs, and reach a greater variety of audiences. But modal national forest programs appeared more innovative.

This documentation is the first survey of existing mid-range fire prevention education programs. Admittedly, the inventory is incomplete. Many known programs of varying degrees of effectiveness have yet to be described. However, I have identified a large enough sample to begin planning evaluation. Eventually, key elements of successful prevention programs can be identified for use in developing more effective fire prevention education programs.

REFERENCES

Bertrand, Alvin W., and Andrew W. Baird
1975 Incendiarism in Southern Forests: A decade of Sociological Research. Mississippi State: Mississippi Agricultural and Forestry Experiment Station, Bulletin 838.

Chandler, Craig C., and James B. Davis
1960 What do People Know About Fire Prevention? Berkeley: U. S. Dep. Agric. Forest Service, Pacific Southwest Forest and Range Experiment Station, Misc. Paper 50.

Christiansen, John R., William S. Folkman, J. Loraine Adams, and Pamela Hawkes
1969 Forest-Fire Prevention Knowledge and Attitudes of Residents of Utah County, Utah, with Comparisons to Butte County. Provo: Brigham Young University, Social Science Research Bulletin No. 5.

Dickerson, Ben E., and Christopher P. Klein
1971 "Development of a scale of knowledge in forest fire prevention for fifth-grade students." New Orleans: U. S. Dep. Agric. Forest Service, Southern Forest Experiment Station, unpublished final report.

Doolittle, M. L., Francis Eller, and Robert S. Jackson
1976 "Strategies for reducing incendiary fire occurrence in the South". Atlanta: U. S. Dep. Agric. Forest Service, Southeastern Area, State and Private Forestry, Special Booklet.

Folkman, William S.
1963 Levels and Sources of Forest Fire Prevention Knowledge of California Hunters. Berkely: U. S. Dep. Agric. Forest Service, Pacific Southwest Forest and Range Experiment Station, PSW-11.

Griessman, Benjamin E., and Alvin L. Bertrand
1969 Factors related to Communication of Forest Fire Prevention Messages. Baton Rouge: Louisiana State University Agricultural Experiment Station, Bulletin 623.

Hansbrough, Thomas R.
1961 "A sociological analysis of man-caused fires in Louisiana." Baton Rouge: Louisiana State University, unpubl. Ph.D. Dissertation.

Jones, Arthur R., Jr., M. Lee Taylor, and Alvin L. Bertrand
1965 Some Human Factors in Woods Burning. Baton Rouge: Louisiana State University Agricultural Experiment Station, Bulletin 601.

Weiss, Carol H.
1973 "Evaluating educational and social action programs: a treeful of owls." Pp. 3-27 in Carol H. Weiss (ed.), Evaluating Action Programs: Readings in Social Action and Education. Boston: Allyn and Bacon.

Wetherill, G. Richard
1977 "The process of evaluation in rural development." Paper presented at the annual meeting of the Southern Association of Agricultural Scientists, Atlanta, Georgia.

An Empirical Evaluation of Four Missing Value Procedures*

by

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Introduction

The problem of contending with missing values or data is endemic to the research process, particularly as it occurs within social science survey methods. Often the most rigorous of designs results in either missing respondents or questions that sampled respondents failed to answer because of misunderstanding, oversight or refusal. While much has been said about the problem of nonresponse to a questionnaire or interview as a whole (Deming, 1944, 1950; Lansing and Eapen, 1959; Sharp and Feldt, 1959; Cochran, 1963; Dohrenwend and Dohrenwend, 1968; Endo, 1975; and Hawkins, 1975), this paper is concerned with nonresponse to any one question or incomplete information from a given respondent. Lansing and Morgan (1971) only briefly deal with this problem. Hertel (1976), on the other hand, discusses at length seven approaches for handling this type of missing data. He states that to compare the consequences of the various approaches either of two courses can be taken. With the first course of action, the researcher starts with a complete data set and then compares the variances and correlation coefficients after first deleting proportions of both random and nonrandomly selected cases and substituting missing data estimates. Otherwise, the researcher can compare missing value procedures "in terms of the number and tenability of their underlying assumptions (Hertel, 1976: 460)." Hertel selects the latter course for comparison.

In the present paper, we plan to examine and evaluate four procedures that have been used in treating missing data. Our approach complements that of Hertel in three instances. We assume in part his first suggestion for comparing different procedures; whereas, our effort is empirical, his effort is algebraic and abstract. In the second instance, we investigate two procedures for handling missing data that he does not address. Finally, we couch our investigation in a social attitudinal-behavioral model.

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Conceptual Model

The model used herein is generated from status attainment literature, which has its origin in the early work of Blau and Duncan (1967). It is derived from that suggested by Falk and Cosby (1975). Their model, shown in figure 1, expands previous status attainment models (Wisconsin Model) by incorporating status contingencies for women. Our model utilizes the latter part of the Falk and Cosby model, beginning with "formation of adolescent attitudes."

Methodology

The present research sample is drawn from the panel data set which includes the study states: Alabama, Georgia, South Carolina, and Texas. Only white, female panel members are selected. Their selection is based upon complete data being available for all eight of the model's variables. In effect, these females (N = 173) can be considered a "target sample" for our purpose. After determining the target sample, we randomly generated two sub-sets with 5% and 10% missing information for each variable. Consequently, the model is applied to three interdependent sets of the same white, female data: (1) the target sample or 100% available data set; (2) a sub-set with 95% available data; and (3) a sub-set with 90% available data. We are concerned subsequently with the impact that our missing value procedures make when comparing each of the sub-sets with the complete data set.

The Variables in the study model were operationalized as follows:

Variable Label	Variable Description	Variable Operationalization
MARP68	Length of Marriage Deferment in 1968	"At what age would you like to get married?"
FEX68	Fertility expectation in 1968	"How many children do you expect to have?"
EDEX68	Educational Expectation in 1968	"What do you really expect to do about your education?"
OPEX68	Occupational Persona in 1968	"If you were completely free to choose any job, what would you desire most as a lifetime job?"
MAR72	Marital Status in 1972	"If married, when did you get married?"

Variable Label	Variable Description	Variable Operationalization
FERT72	Fertility in 1972	"If married, how many children do you have?"
EDAT	Educational Attainment in 1972	"What is the highest degree or educational program you have completed?"
OPAT72	Occupational Persona in 1972	"What job or occupation did you hold on May 2, 1972?"

Missing Value Procedures

For each of the white female sub-sets, missing values are dealt with according to four common procedures. These procedures are briefly described and discussed.

DELETION

This procedure, which is generally considered as pair-wise deletion for association statistics such as Pearson product-moment correlations, omits or does not calculate a bi-variate correlation when either variable has a missing value. In standard computer statistical packages, for example SAS, pair-wise deletion is an automatic process unless otherwise specified. Three considerations should be made when using this procedure. The first consideration is the loss of degrees of freedom. In situations that involve small sample n's, the loss affects significance levels or, in other words, increases the likelihood of committing a type I error. The second consideration addresses the unresolved problem confronting statisticians. Namely, what n does one use in calculating a sample variance? If n_j is used for only the existing data, n_j can vary from one variable to another causing concern for the calculation of summative and associative statistics in bi-variate and multivariate situations. With the remaining three procedures in which a synthetic value is substituted a different problem arises. Does the researcher use n_j or n'? Our practice is to use n', or the full sample number containing original and synthetic/substituted data. Consequently, with all the M.V. procedures, excluding the deletion procedure, the n' for each variable is 173. The third consideration is that given the lack of a substituted score for a missing value, techniques such as multiple regression and path analysis initiate a list-wise deletion procedure that cumulatively omits data in its operation.[6] This list-wise deletion procedure drastically diminishes sample sizes, which affects the degrees of freedom involved in a regression analysis of variance. Again, we have returned to the increased chance of committing a type I error for testing variances (F-test) and rhos (t-test).

MEAN SUBSTITUTION

Whenever missing data occur, the substitution of the appropriate sample mean for any single missing datum is probably the most commonly used procedure by social scientists. Like the deletion procedure which is unbiased, the mean is an unbiased estimate of its target sample parameter ($\bar{X}$) . . . (Steele and Torrie, 1960). Moreover, with such techniques as simple and multiple regression, the mean is on the line-of-best-fit, thus minimizing its least squares distance. This adds to its attractiveness as a substitutable value. However, the mean substitution procedure is theoretically conservative in estimating a true zero-order correlation and results in a proportional reduction in variance. Hertel (1976) demonstrates these conditions mathematically and continues to state that, "the reduction in variance that results from use of the sample mean solution in turn results in reduced levels of association among treated variables."[7] With our data, on the other hand, the sub-set means ($\bar{x}_i$) are the substituted values used in calculating $r_{x'y}$. Since these means do not equal the corresponding sub-set's correlation with a missing data value substituted ($r_{XY} < r_{x'y}$).

PROBABILITY DISTRIBUTION FUNCTION (PDF)

With the PDF, a random, uniform number is generated between zero and one. This number is then multiplied by 100 to produce a percentage. The "random percentage" is then assigned according to the percentage frequencies for a distribution of responses for a particular variable's code categories. An example of the PDF follows (RV = random value):

Random Value = Uniform (0) times 100;

If 0% < RV < 10% then variable X = 1;

If 10% < RV < 50% then variable X = 2;

If 50% < RV < 80% then variable X = 3;

If 80% < RV < 100% then variable X = 4.

An immediate limitation of the PDF is that it becomes a tedious operation to implement if a variable's data are continuous and spread over a large range. Furthermore, it favors the assignment of values for missing data according to the largest frequency cell(s). Although the generation of a value is random, its assignment has a central tendency; the effects of which can be analogous to those conservative effects of a mean substitution procedure.

RANDOM NORMAL ROUTINE (RNR)

In utilizing the "norm" routine outlined by Barr and Goodnight (1972), a distribution of random, normal values are generated with the same mean and standard deviation as that of the known data values for a given variable. These randomly generated values, which are within the range of legitimate responses made by surveyed panel members, are then substituted for the missing data. This procedure has an advantage over the simpler mean substitution procedure. The "norm" routine does not ultimately shift a response distribution toward its mean, thus leading to an under-estimation of its variance. This procedure, however, warrants caution when there is a large number of missing data for a particular variable. The substitution of many generated values may reify a random, normal distribution when perhaps another distribution is indicated by the original, known data. Another concern is with the values the missing data assume. Theoretically these values can be scattered widely in the distribution of responses. If this wide scattering occurs, bi-variate correlations may become depressed.

Evaluation Techniques

Although multivariate situations have been discussed, the examination and evaluation of the four missing value (M.V.) procedures takes into account only general level comparisons. These comparisons are made in three ways. The first is a descriptive accounting of the means and standard deviations of the complete data set and of each of the sub-sets when the four missing value procedures are applied. A second comparison is made between each variable vector of the sub-sets with the corresponding vector in the target data set. This amounts to correlating the eight model variables for complete data with the same eight for each sub-set under a particular M.V. procedure. Two vectors (for example, $EDAT_{100}$ correlated with $EDAT_{95}$ using the mean substitution procedure) are compared by examining their correlation on the matrix diagonal. The closer to one (1) the correlation approaches, the closer the approximation of the sub-set data (with missing value substituted) with the original target data.

The third level comparison is between the inter-variable correlations. That is, the inter-variable correlation of $r_{FERT72 \cdot EDAT}$ for the target data is compared to the corresponding correlation for each sub-set under a particular M.V. procedure. To accomplish this, the correlations are first converted to Z-scores by applying the Fisher Z-transformation technique (Steele and Torrie, 1960).[8] The scores are then compared by taking their difference and dividing by the standard deviation (the square root of the sum of the variances or $1/(n_i - 3)$. The resulting statistic is identified as Z_s and its values are checked against those values in a normal table. In short, this comparison procedure tests the homogeneity between two correlation coefficients.

The homogeneity among several correlation coefficients is tested by Kendall's coefficient of concordance-W (Siegel, 1956). Before calculating Fisher's W, the absolute differences are determined between each sub-set correlation (computed after applying a particular M.V. procedure) and the corresponding target data correlation. For each bi-variate relationship, the differences are ranked from small (1) to large (4) according to their magnitude. Subsequently, Fisher's W is calculated to test for agreement among the rank differences of the four M.V. procedures; a large coefficient denotes that one or more procedures are ranked in a consistent pattern.

Analysis: Level Comparisons

Means and Standard Deviations

As reported in Table 1, the four M.V. procedures yield results for means and standard deviations that are generally of the same magnitude as the target data and lack any significant patterns of over- and under-estimation. While the deletion procedure consistently approximates and target data, the means substitution procedure shows lower standard deviations at both levels of missing data. As stated earlier, this is to be expected since a mean value used in this manner is a constant with a variance of zero. Thus, an assignment of a mean to a variable with a missing value decreases the variance of that variable (see footnote 7). As for the PDF, means and standard deviations closely parallel the target data but show a slight increase when the number of missing data increases. The RNR, likewise, produces an increase in these measures. The increases shown under the PDF and RNR are a result of (1) their random generation of values rather than an assignment of a measured central value and/or (2) the use of values that are contingent on sub-set data rather than the complete data. In spite of the slight increases when using the PDF and RNR, no one procedure demonstrates clear superiority over the others in approximating the means and standard deviations of the target data set.

Item-Vector (I-V) Correlation Comparisons

In Table 2, the I-V correlations are presented. Again, these correlations reflect the strength (or weakness) of a particular M.V. procedure in reproducing a corresponding variable vector in the target data set. The results of the deletion procedure are an artifact of our comparison method and, consequently, lack interpretative value (see footnote to Table 2). For the remaining procedures, substitution of the mean produces the highest I-V correlations. The range of these correlations is from .914 to .988 (not controlling for level of missing data). As for the PDF and the RNR, the latter procedure performs slightly better at the lower missing value level. The role is reversed as the level increases. In general, the I-V correlations drop for all the procedures as the level of missing data increases. However, with the introduction of a random type process in determining missing value scores, the correlations tend to be affected downward in magnitude.

Inter-item Correlation Comparison[9]

In generating subset missing data, we assured only the selected data to be omitted and treated as missing values were distributed at least randomly. However, with correlation coefficients approaching zero, we cannot assume normality either to exist in the sample distributions or to underlie the correlation matrix.[10] Consequently, the correlation coefficients are standardized with the use of z-scores, which have a normal distribution.

In Table 3, the inter-item correlations, their z-transformations and z-statistics are reported for the sub-set with five percent missing data. At this level, none of the M.V. procedures produce significantly different correlations when compared to the corresponding target data correlations.

Also, the correlations maintain their directionality (minimum changes in the signs of the correlations themselves). Likewise, similar findings appear in Table 4, except in three instances, for the sub-set with ten percent missing data. The PDF yielded significant differences between the z-scores for the bivariate associations of MAR72-FERT72 and FERT72 and OPAT72, while the RNR procedure produced a significant difference for the EDEX68-EDAT relationship. Also, in comparing the magnitudes of z-statistics (z_s), the PDF and RNR consistently have higher values than the other two procedures. The RNR, however, accounts for higher z-statistics in half of the 28 bivariate associations for each level of missing data. Although the higher values are not statistically significant, they do suggest that among all the procedures' conservative (undersetimation) results, the RNR is the most conservative in its estimates fifty percent of the time.

Kendall's Coefficients of Concordance (W)

In Table 5, Kendall's W indicates the level of homogeneity among the ranking of three or more combinations of procedures. As stated previously, rankings are based on the magnitude of the absolute differences between the sub-set and full data inter-item correlations (see Tables 3 and 4). At the five percent level of missing data, the rankings of deletion, mean, and PDF procedures taken together have roughly 22% agreement in the rankings. As the level of missing data increases, the degree of homogeneity increases in three instances, the highest of which is for the group of deletion, mean and RNR procedures (28%). The agreement among all four procedures drops slightly to 21%. Across both levels of missing data, the W's are significant for all combinations. In perspective, these findings suggest that in spite of significant W's, the levels of agreement are relatively low. That is, controlling for level of missing data, no one M.V. procedure is predominantly ranked above the others, or consistently has the smallest differences between its inter-item correlations and those correlations in the target data set.

Summary

The present research has drawn upon the extended two previous efforts. The first was Hertel's (1976) methodological considerations of seven missing data procedures; the second was Falk and Cosby's (1975) theoretical model for women's status attainment processes. We have examined four procedures for handling randomly generated missing data for a panel of white females from five Southern states. Each of the procedures- deletion, mean substitution, PDF, and RNR - was applied with five and ten percent missing data for the individual variables in the model. Although process (mulitivariate) analyses were not addressed, the model, itself, concerned the transmission of four status attitudes into related status behaviors or attainments.

Evaluation of the four procedures was conducted for level comparisons. These comparisons consisted of examining: (1) means and standard deviations; (2) item-vector correlations; (3) inter-item correlations, and (4) Kendall's W. General findings suggested that although means and standard deviations closely approximated those of the target data set, the M.V. procedures yielded I-V and inter-item correlations that were over-estimations for the remaining procedures. The mean substitution, PDF and RNR procedures resulted in conservative approximations. The RNR tended to be the most conservative. As the missing data level increased, the four procedures produced even lower, conservative approximations. Although significant, Kendall's coefficients of concordance (W = .216 and .207 for 5 and 10 percent M.W. sub-sets, respectively) did not support any one procedure as being either decidedly superior or inferior than the others.

Footnotes

1. Hertel (1976) examines the procedures: (1)delete cases, (2)delete items, (3)sample mean, (4)group mean, (5)pair-wise r, (6)regression analysis, and (7)random assignment solution.

2. Historically, the research was accomplished as two regional projects supported by the Cooperative State Research Service, U.W. Department of Agriculture, and the Agriculture Experiment Stations in the respective states. The first investigation, designated as the S-61 project, was entitled, "Human Resource Development and Mobility in the Rural South." Its successor was designated as S-81 and entitled, "Development of Human Resource Potentials of Rural Youth in the South and Their Patterns of Mobility."

3. Mississippi panel members were not surveyed in 1968; however, Louisiana seniors were surveyed in purposively selected schools.

4. The original SYS white, female panel had only 25 of 243 members expecting five or more children. For our sample, less than half of the 25 desired more than five children.

5. Traditional female occupations included: cook, waitress, model, nurse, teacher, secretary, lab technician, maid, bookkeeper, dancer, telephone operator, receptionist, key punch operator, sales clerk, stewardess, florist, seamstress, interior decorator, actress, and beautician. These occupations were arbitrarily selected by a panel of researchers.

6. For example, with five and ten percent missing data, SAS initiated a list-wise deletion procedure that resulted in 30 and 61 percent sample size reductions, respectively.

7. The reduction in the correlation coefficient is shown below with r expressed in standardized form.

$$(A) \quad r_{xy} = \frac{\sum Z_x Z_y}{n} \qquad \text{where } Z_x = \sum (x_i - \bar{x})^2 / s_x$$

$$Z_y = \sum (y_i - \bar{y})^2 / s_y$$

If x and y each have missing values, then equation A becomes

$$(B) \quad r_{xy} = \frac{\sum Z_x Z_y + \sum Z'_x Z_y + \sum Z_x Z'_y + \sum Z'_x Z'_y}{n_1 + n_2 + n_3 + n_4}$$

where Z'_x and Z'_y are equal to zero when, for example,

$$Z'_x = \sum (\bar{x}_i - \bar{x})^2 / s_x = 0 \quad \text{and} \quad Z'_y = \sum (\bar{y}_i - \bar{y})^2 / s_y = 0$$

Equation B becomes

$$\text{(C)} \quad r_{xy} = \frac{\sum Z_x Z_y}{n_1 + n_2 + n_3 + n_4}$$

If x_i and y_i each have missing values, then equation A becomes

$$\text{(B)} \quad r_{xy} = \frac{\sum (Z_x Z_y + Z'_x Z_y + Z_x Z'_y + Z'_x Z'_y)}{n_1 + n_2 + n_3 + n_4}$$

where Z'_x and Z'_y are equal to zero when, for example,

$Z'_x \equiv (\bar{x}_i - \bar{x}) / s_x = 0$ and $Z'_y \equiv (\bar{y}_i - \bar{y}) / s_y = 0$

as the appropriate mean is substituted for a missing datum.

Equation B becomes

$$\text{(C)} \quad r_{x'y} = \frac{\sum Z_x Z_y}{n_1 + n_2 + n_3 + n_4}$$

where n_1 = no. of pairs in which no data is missing

n_2 = no. of pairs in which x_i has missing data

n_3 = no. of pairs in which y_i has missing data

n_4 = no. of pairs in which x_i and y_i are both missing data.

or

$$\text{(D)} \quad r_{x'y} = \frac{\sum Z_x Z_y}{N}$$

where $N = n_1 + n_2 + n_3 + n_4$, the total number of possible pairs of data...$N > n$.

Thus $r_{x'y} < r_{xy}$ since $\dfrac{\sum Z_x Z_y}{N} < \dfrac{\sum Z_x Z_y}{n}$.

8. Each correlation is converted to a Z-score by the formula:

$$Z = .5 \ln \frac{1 + r}{1 - r}$$

The Z-score is approximately normally distributed with approximate mean and standard deviation of $.5 \ln (1 + \rho)(1 - \rho)$ and $1 / (n - 3)$ regardless of the value of ρ.

9. With the structure of the research model, multicollinearity should be suspected among the attitudinal variables in particular. However, since we used mono-dimensional attitudes and the correlations between and among these variables are well below .6, we find no problem with the presence of multicollinearity (Heise, 1969).

10. There is literature that asserts Pearson's zero-order correlation and simple and multiple regression analysis are robust techniques; therefore, their assumptions of randomness and normality can be relaxed (Zeller and Levine, 1974; Hinderlang, 1971; Bohrnstedt and Carter, 1971; and Heise, 1969).

References

Alexander, Karl L. and Bruce Eckland
1973 "Effects of Education on Social Mobility of High School Sophomores Fifteen years Later (1955 - 1970)." Chapel Hill: Institute for Research in Social Science.

Barr, Anthony J. and James H. Goodnight
1972 A User's Guide to the Statistical Analysis System. Raleigh, North Carolina: North Carolina State University.

Bayer, Alan
1969 "Life Plans and Marriage Age: An Application of Path Analysis," Journal of Marriage and Family 31 (August): 551-558.

Blau, Peter and Otis W. Duncan
1967 The American Occupational Structure. New York: Wiley.

Bohrnstedt, George and T. Michael Carter
1971 "Robustness in Regression Analysis," in Herbert Costner (ed.), Sociological Methodology. San Francisco: Jossey-Bass.

Byrd, Wayne
1976 "Success-Orientations of Rural Southern Male Youth: A Developmental Perspective." Unpublished Master's Thesis, Texas A&M University. College Station, Texas, December.

Cochran, William G.
1963 Sampling Techniques, Second edition. New York: Wiley.

Cosby, Arthur G. and J. Steven Picou
1973 "Structural Models and Occupational Aspirations: Black-White Variations Among Deep-South Adolescents,"Journal of Vocational Behavior (January).

Deming, W.E.
1944 "On Errors and Surveys," American Sociological Review 9 (November): 359-369.

Dohrenwend, Barbara and Bruce P. Dohrenwend
1968 Sources of Refusals in Surveys, " Public Opinion Quarterly 32 (Spring): 74-83.

Endo, C.M.
1975 "The Problem of Nonresponse in Survey Research" in G. H. Lewis (ed) Fist-fights in the Kitchen: Manners and Methods in Social Research. Pacific Palisades, Calif: Goodyear.

Falk, William and A. G. Cosby
1975 "Women and the Status Attainment Process," Social Science Quarterly (September): 307-314.

Hawkins, Darnell
1975 "Estimation of Non-response Bias," Sociological Methods and Research 3(May): 461-485.

Heise, David
1969 "Problems in Path Analysis and Causal Inference," Chapter in E. Borgatta and George Bohrnstedt (eds.) Sociological Methodology. San Francisco: Jossey-Bass.

Hertel, Bradley
1976 "Minimizing Error Variance Introduced by Missing Data Routines in Survey Analysis," Sociological Methods and Research 4(May): 459-474.

Hinderlang, Michael J.
1971 "The Effects of Normality Violations on the Interpretation of Correlation Coefficients," Journal of Research in Crime and Delinquency (July): 156-164.

Kuvlesky, William and Robert Bealer
1966 "Clarification of the Concept 'Occupational Choice'," Rural Sociology 31(September):256-276.

Lansing, John B. and A. T. Eapen
1959 "Dealing with Missing Information in Surveys," Journal of Marketing 24(October): 21-27.

Lansing, John B. and J. N. Morgan
1971 Economic Survey Methods, Michigan: Institute for Social Research.

Porter, James
1974 "Race, Socialization and Mobility in Educational and Early Occupational Attainment," American Sociological Review, vol. 3: 303-316.

Siegel, Sidney
1956 Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill.

Sharp, H. and A. Feldt
1959 "Some Factors in a Probability Sample Survey of a Metropolitan Community," American Sociological Review 24(October): 650-661.

Steele, Robert and James Torrie
1960 Principles and Procedures of Statistics. New York: McGraw-Hill.

Zeller, Richard and Zachary H. Levine
1974 "The Effects of Violating the Normality Assumption Underlying r," Sociological Methods and Research 2(May): 511-519.

TABLE1 : MEANS AND STANDARD DEVIATIONS FOR MISSING VALUE PROCEDURES: WHITE FEMALES

VARIABLES	100%*		5% MISSING DATA								10% MISSING DATA							
			DELETION		MEAN		PDF		RNR		DELETION		MEAN		PDF		RNR	
	$\bar{X}$	SD	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd
MARP68	3.09	2.13	3.02	2.06	3.02	2.00	3.01	2.09	2.97	2.05	3.06	2.13	3.06	2.06	3.10	2.12	3.10	2.16
FEX68	3.03	1.23	3.07	1.24	3.07	1.21	3.05	1.25	3.06	1.25	3.04	1.24	3.04	1.17	3.05	1.24	2.98	1.27
EDEX68	3.35	1.26	3.35	1.26	3.35	1.25	3.34	1.26	3.34	1.26	3.35	1.27	3.35	1.18	3.38	1.29	3.45	1.27
OPEX68	1.75	0.49	1.74	0.49	1.74	0.48	1.74	0.49	1.76	0.50	1.76	0.47	1.76	0.44	1.78	0.46	1.77	0.47
MAR72	2.47	1.63	2.49	1.64	2.49	1.60	2.51	1.66	2.53	1.62	2.47	1.65	2.47	1.57	2.46	1.66	2.57	1.67
FERT72	0.47	0.62	0.47	0.62	0.47	0.61	0.46	0.61	0.47	0.62	0.46	0.60	0.46	0.58	0.48	0.60	0.46	0.60
EDAT	2.72	1.15	2.72	1.16	2.72	1.13	2.73	1.17	2.72	1.15	2.76	1.17	2.76	1.09	2.75	1.16	2.76	1.17
OPAT72	1.68	0.53	1.69	0.53	1.69	0.51	1.69	0.52	1.68	0.53	1.70	0.53	1.70	0.49	1.71	0.54	1.68	0.54

TABLE 2 : FULL DATA AND MISSING VALUE SUBSET CORRELATIONS FOR CORRESPONDING VARIABLE VECTORS

VARIABLES	5% MISSING DATA				10% MISSING DATA			
	DELETION*	MEANS	PDF	RNR	DELETION	MEANS	PDF	RNR
MARP68	1.000	.9400	.8884	.9237	1.000	.9698	.9653	.9000
FEX68	1.000	.9816	.9458	.9570	1.000	.9490	.8804	.8526
EDEX68	1.000	.9912	.9726	.9891	1.000	.9328	.8409	.8404
OPEX68	1.000	.9891	.9636	.9536	1.000	.9142	.9001	.8758
MAR72	1.000	.9795	.9340	.9673	1.000	.9591	.9243	.8899
FERT72	1.000	.9840	.9773	.9539	1.000	.9418	.8988	.9295
EDAT	1.000	.9880	.9524	.9583	1.000	.9533	.9259	.9271
OPAT72	1.000	.9747	.9578	.9579	1.000	.9346	.8265	.9178

* Correlating a M.V. deletion vector with the corresponding complete data vector is, in itself analogous to correlations yielded under a "pair-wise" deletion procedure. Consequently, the correlation between these two vectors is equal to one.

TABLE 3 : COMPARISON OF UNSTANDARDIZED PATH REGRESSION COEFFICIENTS (PRC)

STRUCTURAL EQUATION	TARGET SAMPLE	5% MISSING DATA				10% MISSING DATA			
		DEL	MEAN	PDF	RNR	DEL	MEAN	PDF	RNR
MAR72=MARP68	-.379†	-.474†	-.410†	-.342†	-.374†	-.511†	-.392†	-.352†	-.314†
FEX68	-.140	-.041	-.077	-.087	-.059	-.020	-.165	-.143	-.179
EDEX68	.004	.100	.025	.004	.045	-.142	.021	-.036	.023
OPEX68	-.406	-.151	-.342	-.494*	-.318	-.700*	-.286	-.114	-.275
R^2	.295†	.289†	.299†	.242†	.248†	.464†	.289†	.222†	.185†
FERT=MARP68	-.066†	-.096†	-.082†	-.075†	-.083†	-.078*	-.065†	-.043*	-.062†
FEX68	-.058	-.014	-.050	-.044	-.040	-.037	-.074*	-.072	-.089†
EDEX68	-.023	-.036	-.010	-.020	.003	-.050	-.015	-.056	.017
OPEX68	-.288†	-.331†	-.274†	-.279†	-.238*	-.404†	-.325†	-.327†	-.376†
R^2	.157†	.212†	.171†	.161†	.147†	.236†	.160†	.148†	.179†
EDAT=MARP68	-.037	-.008	-.023	-.016	-.018	-.115	-.012	-.019	.001
FEX68	-.056	-.070	-.063	-.048	-.094	.042	-.017	-.075	.050
EDEX68	.529†	.569†	.497†	.511†	.470†	.841†	.484†	.439†	.386†
OPEX68	.127	.250	.133	.100	.136	.421*	.148	.125	.274
R^2	.324†	.388†	.299†	.305†	.275†	.594†	.281†	.250†	.204†
OPAT72=MAR72	-.033	-.038	-.037	-.051	-.034	-.034	-.037	-.039	-.034
FERT72	-.328†	-.376†	-.253†	-.230†	-.245†	-.328†	-.298†	-.187†	-.272†
EDAT	.096†	.048	.090*	.090*	.094*	.065	.092*	.114†	.092*
MARP68	.018	.019	.018	.014	.026	.023	.016	.012	.010
FEX68	.009	.010	.017	.020	.027	-.007	-.010	.026	-.009
EDEX68	-.014	.009	.001	-.009	.011	.024	.010	.005	.003
OPEX68	.017	-.045	.034	.041	.000	-.152	-.029	-.007	.052
R^2	.330†	.360†	.275†	.265†	.270†	.315†	.295†	.205†	.237†

* .05 > |T|; also .05 > F for R^2.

† .01 > |T|; also .01 > F for R^2.

TABLE 4 : COMPARISON OF STANDARDIZED PATH REGRESSION COEFFICIENTS (SPRC)

STRUCTURAL EQUATION	TARGET SAMPLE	5% MISSING DATA				10% MISSING DATA			
		DEL	MEAN	PDF	RNR	DEL	MEAN	PDF	RNR
MAR72=MARP68	-.494	-.619	-.536	-.447	-.489	-.668	-.512	-.460	-.410
FEX68	-.105	-.031	-.058	-.066	-.044	-.015	-.124	-.108	-.135
EDEX68	.003	.077	.019	.003	.035	-.110	.016	-.028	.018
OPEX68	-.122	-.045	-.103	-.148	-.096	-.210	-.086	-.034	-.083
Y-INTERCEPT	.000	-.080	-.006	.006	.013	-.005	-.004	-.000	.006
FERT=MARP68	-.227	-.330	-.282	-.258	-.285	-.268	-.223	-.148	-.213
FEX68	-.116	-.028	-.099	-.087	-.079	-.073	-.147	-.143	-.177
EDEX68	-.047	-.073	-.020	-.041	.006	-.102	-.031	-.114	.034
OPEX68	-.228	-.262	-.216	-.220	-.188	-.319	-.257	-.258	-.297
Y-INTERCEPT	.000	-.015	-.010	-.029	-.010	-.013	-.013	.035	-.013
EDAT=MARP68	-.069	-.015	-.043	-.030	-.033	-.213	-.022	-.035	.002
FEX68	-.061	-.075	-.067	-.051	-.101	.045	-.018	-.080	.054
EDEX68	.580	.624	.545	.560	.515	.922	.530	.481	.423
OPEX68	.054	.106	.057	.043	.058	.179	.063	.052	.117
Y-INTERCEPT	.000	.004	.002	.014	.004	.028	.033	.024	-.002
OPAT72=MAR72	-.103	-.117	-.114	-.157	-.105	-.105	-.114	-.120	-.105
FERT72	-.384	-.440	-.296	-.269	-.287	-.384	-.349	-.219	-.318
EDAT	.210	.104	.195	.195	.204	.141	.200	.247	.200
MARP68	.072	.076	.072	.056	.104	.092	.064	.048	.040
FEX68	.020	.023	.040	.046	.063	-.016	-.023	.060	-.021
EDEX68	-.033	.021	.002	-.021	.026	.057	.024	.012	.007
OPEX68	.016	-.042	.031	.038	.000	-.141	-.027	-.006	.048
Y-INTERCEPT	.000	.021	.022	.019	.008	.030	.006	.052	-.009

TABLE 5 : DECOMPOSITION OF CAUSAL EFFECTS ON EARLY OCCUPATIONAL ATTAINMENT (OPAT72)

EXOGENOUS VARIABLES	TARGET DATA	5% MISSING DATA				10% MISSING DATA			
		DEL	MEAN	PDF	RNR	DEL	MEAN	PDF	RNR
Total Causal Effects (P_{ij})									
MARP68	.195	.249	.209	.189	.229	.153	.193	.129	.153
FEX68	.063	.026	.063	.072	.070	.012	.040	.084	.060
EDEX68	.107	.121	.114	.098	.123	.231	.138	.159	.978
OPEX68	.127	.139	.119	.128	.076	.066	.085	.068	.175
Direct Causal Effects (P_{ij}')									
MARP68	.072	.076	.072	.056	.104	.092	.064	.048	.040
FEX68	.020	.023	.040	.046	.063	-.016	-.023	.060	-.021
EDEX68	-.033	.021	.002	-.021	.026	.057	.024	.012	.007
OPEX68	.016	-.042	.031	.038	.000	-.141	-.027	-.006	.048
Indirect Causal Effects $(P_{ij} - P_{ij}')$									
MARP68	.123	.173	.137	.133	.125	.061	.129	.081	.113
FEX68	.043	.003	.023	.026	.007	.028	.063	.024	.081
EDEX68	.140	.100	.112	.119	.097	.174	.114	.147	.071
OPEX68	.111	.181	.088	.090	.076	.207	.112	.074	.127
Percent Indirect Causal Effects $((P_{ij} - P_{ij}')/P_{ij})$									
MARP68	63.1	69.5	65.6	70.4	54.6	39.9	66.8	62.8	73.9
FEX68	68.2	88.5	36.5	36.1	10.0	166.7	157.5	23.6	135.0
EDEX68	130.8	82.6	98.2	121.4	78.9	75.3	82.6	92.4	90.0
OPEX68	87.4	130.2	74.0	70.3	100.0	313.6	131.8	108.8	72.6

Section K

AGRICULTURAL INSTITUTIONS

"Some Ambiguities in the Measurement of Agricultural Structure." Ronald C. Wimberly and Michael J. Belyea, North Carolina State University.

"Characteristics of Minority-Owned Business Enterprises in Selected South Carolina Urban Areas." Steven R. Pettigrew, James E. Thompson, and Jerold F. Pittman, Clemson University.

SOME AMBIGUITIES IN THE MEASUREMENT OF AGRICULTURAL STRUCTURE[1]

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ABSTRACT

This study attempts to determine the dimensionality of agricultural structure through agricultural census data. Indicators of farm operation, ownership, and labor resources are submitted to a series of factorings for North Carolina counties. When analyzed without regard to the numbers of farms in each county, all indicators load extremely well on a single factor. This dimension represents numbers of farms per county. It is assumed, however, that county agricultural structure means something more than number of farms per county. Therefore, other social dimensions are sought from these data. How? Ratios, proportions, and means based on a county's number of farms are used to transform the original indicators. Reanalysis provides three factors that are basically similar for the various transformations. Yet some problems potentially remain. One more factoring with a different control technique seems to give better simple structure. These, along with the transformation factors, are interpreted as (1) labor resources with part owner-operations, (2) partner versus independent ownership, and (3) tenancy operation and corporate ownership.

THE STRUCTURE OF AGRICULTURE

Social organization is a basic concept in sociology. When asking what relevance sociology has for agriculture, the organization of agricultural activities seems an obvious place to look. Agricultural organization, or structure, pertains to farms. It also includes interest groups, businesses, and government agencies which provide resources for farms. At the other end of the agricultural system are the buyers, processors, and consumers of food and fiber. In still another sense, differentiation in agricultural structure exists within local, state, regional, and national government administrative units. This study focuses upon one of the smaller types of administrative units. This is the county.

The search for patterns of agricultural differentiation at the county level has parallels. Eberts (1974), Schmidt (1973), Hadden and Harte (1976), Stuby (1975), and others provide examples of structural differentiation in the commercial specialization of counties. Foley (1976) and some of the above researchers have approached the differentiation of county medical services in the same manner.

Agriculture, of course, is a major sector of community social structure in many counties. Besides, much governmental administration of agricultural policies operates through county units. Therefore, a better understanding of county agricultural structure may be useful for shaping farm policy, for understanding community structure, and for knowledge of social organization generally. The present attempt is to locate interpretable dimensions of county agricultural structure.

PROCEDURES

Data are drawn from farms with sales of $2,500 or more as reported by the 1969 U. S. Census of Agriculture for North Carolina. This state has 100 counties. However, one of these contains no more than six farms, and, to avoid disclosure of its farm(s), census data are not listed. The assortment of commodities produced in North Carolina is quite heterogeneous. This corresponds to a variety of geological and climatic conditions from the coastal area through the piedmont and into the Appalachians.

Analysis variables are chosen for their social organizational connotations rather than for differentiation in crops, livestock, or specific economic features. Farm size is ommitted since it may relate to certain types of commodities such as cattle on large farms and tobacco or poultry on smaller acreages. Age and race of the operator are excluded since these depict personal characteristics rather than structural information about farms.

The indicators selected from the census information are type of operation as (1) full owner-operator, (2) part owner-operator, and (3) tenant operator; farm ownership characteristics according to (4) individual or family, (5) partnerships, and (6) corporations; and labor resources in (7) thousands of dollars spent for hired labor, (8) thousands spent for contract labor, (9) machinery value in thousands of dollars, (10) numbers of trucks used in farming, and (11) numbers of tractors. These indicators are not presumed to be the best imaginable but, at least, are available through existing census materials. Their dimensionality is to be assessed by principal axis factoring with initial communality estimates and oblique, promax rotations.

ANALYSIS

Pearsonian correlations among the structural indicator variables show all relationships to be positive and strong. They range from .66 to .99. Only five fall below .80. As might be expected from such a tight correlation matrix, 92 percent of the initial common factor variance is explained by the first factor. Therefore, a single factor solution is judged appropriate.

But, what does this factor measure? The answer seems to be the number of farms in counties. Counties with many farms tend to have more in each operator category, high frequencies of each ownership type, and more labor resources. Counties with small numbers of farms tend to have lower values on each variable. This produces high intercorrelations.

From a structural perspective, this means that agricultural differentiation would correspond to the total number of farms in a county. There is a classic sociological dictum that the greater the population in a given area, the greater its division of labor (Durkheim, 1893). This implies more to structural differentiation than numerical size and density. Here, the number of farms is considered to obscure other social aspects of the indicators. To learn the social sides of agricultural structure, therefore, the indicators must be adjusted by total farms per county.

Transforming the variables. There are two fairly obvious ways of making these adjustments for size. One is to divide the value of each variable by the total number of farms in each county. This transforms the operator and ownership types into proportions and the labor resources into means. For example, one county's farms are 54 percent full owner-operated and have a mean machinery value worth $8,800.

Another approach to standardizing variables by the numbers of farms in each county is to divide the total number of farms in each county by its respective values on the variables. In these instances, the total number of a county's farms in the numerator and variable's value is the denominator. These quotients will be called ratios in order to distinguish them from the proportions and means. For example, there is a ratio of total farms to the number of corporate farms in a county. If all of a county's farms were corporate, the ratio would be 1.0; if only one were of this type, the ratio would be equivalent to the number of all farms in the county.

The question is whether the variables as transformed into proportions and means will yield reliably the same dimensional interpretations as would their ratio transformations. To find out, separate principal axis factorings and promax rotations are made for the two new sets of variables.

Dimensionality of the transformed variables. In contrast to the untransformed variables, some correlations among the proportionate and mean variables took negative signs and some were small. This was an intended consequence of the transformations since negative signs or smaller r's should allow more than one underlying dimension. Correlation coefficients ranged from -.93 to .83 but were mostly in the vicinity of ± .2 to ± .5. Factor criteria give evidence of three factors accounting for 97 percent of the common variance among the proportions and means.

Correlations among the ratio transformed variables likewise tend to be lower than those for their unstandardized counterparts and occasionally negative. They range from -.84 to .79 and center between ± .2 and ± .5. As with the previous round of transformations, the ratio variables produce three factors which explain 94 percent of the shared variance.

Three-factor promax rotations for both sets of transformations are reported in Tables 1A and 1B. Loadings on the factors are not identical but, regardless of the type of transformation, interpretations are similar.

The first factored dimension is dominated by part owner-operated farms and labor resources. Stated otherwise, this factor suggests a profile of county agricultural structure that combines part owner farm operators with labor resources. Most of these organizational resources are less obvious for full owner or tenant operations. Whereas aggregated county data do not enable one to flatly conclude that these arrangements necessarily exist on the same farms, they at least seem to coexist in the same counties and possibly on the same farms.

The second factor shows a contrast between counties with farms owned by partners and those owned and operated by individuals or families. If a county has farms owned by partnerships, it tends to have few which are independently operated by the owner--or vice versa. In this instance it is obvious that these characteristics cannot both apply to the same farm.

Factor three may be defined as a corporate owner and tenant operator dimension with supplementary loadings from hired and contract labor. Whether tenants operate the corporately owned farms is not immediately obvious. However, corporate farms may use tenant operators along with hired and contract labor. This alliance or cohabitation within counties also tends to appear in absence of full owner-operations.

TABLE 1. PROMAX ROTATED FACTORS OF COUNTY AGRICULTURAL STRUCTURE: I. RESOURCES, II. PARTNER VS. INDEPENDENT OWNERSHIP, AND III. TENANCY-CORPORATE OWNERSHIP VS. FULL AND PART OWNER-OPERATIONS*

	Indicator variables	A. Proportionate and mean transformations			B. Ratio transformations			C. Partial controls		
		I	II	III	I	II	III	I	II	III
Operation	Full owner-operated		-.55	-.41		.34	-.43	-.51		.43
	Part owner-operated	.84			.69			.34		.70
	Tenant operated	-.43	.50	.60	-.30		.88			-.82
Ownership	Independent owner		-.90			.84			-.94	
	Part owner		1.03**	-.31		-.96			1.05**	
	Corporate owner			.70			.57			-.34
Labor resources	Hired labor	.34		.61	.45		.47	.77		
	Contract labor	.58		.30	.55		.39	.79		
	Machine value	.85			.80			.95		
	Number of trucks	.89			.96			.91		
	Number of tractors	.65		.30	.34		.65	.84		

*Only loadings ≥ .30 are reported.
**Loading of ≥ 1.0 in oblique, promax rotation is < 1.0 in orthogonal, varimax rotation.

Some differences in loadings can be spotted between corresponding factors for the two sets of transformed variables. In the case of tenant operators and factor two, there is a high loading for the proportion of tenant operators but a near zero loading for the ratio of total to tenant farms. In another instance, the mean tractors per county loads well with other labor resources in factor one but higher as a ratio with corporate ownership, tenant operation, and hired labor in factor three. While such disparities are bothersome, variations in certain loadings have little impact on the overall interpretation of the rotated factors.

It is not easy to determine which type of transformations provide the most nearly accurate representation of the dimensions. This is another ambiguity in the measurement of structural differentiation in agriculture that should be noted. Perhaps, though, many researchers and data users can think more readily in terms of proportions and averages than with ratios.

Recall that a major obstacle to understanding the social implications of the original structural indicators was the ambiguity contributed by the varying frequencies of farms across counties. The transformations attempted to adjust for this. Indeed, the intercorrelations among sets of transformed variables were lower than before and led to more than a unidimensional view of county structure according to numbers of farms. The social ramifications of agricultural conditions became more discernable. The transformations helped remove spuriousness from correlations among the original variables which was due to farm numbers.

In the transformations, however, total farms per county was used as either a numerator or denominator. Ironically, such numerators and denominators inject another potentially common and spurious element into the bivariate relationships of the transformed variables. This possibility is discussed by Fuguitt and Lieberson (1974) and others. If anything, this kind of spuriousness in the transformed correlations may have inflated initial factor communality estimates and led to the extraction of more factors than warranted. Systematic biases of this kind are generally considered to produce factors with small loadings and eigenvalues accounting for small portions of common variance. Therefore to be cautious, only three factors were kept for each set of transformed variables rather than four which would have drained all the common variance from their correlation matrices. The assumption here is that the fourth factors consisted primarily of spuriousness from common denominators or numerators. In short, the transformations,done to remove spurious effects attributed to numbers of farms,may have introduced a different form of spurious side effects.

Controls. To check for this new strain of contamination, another approach is available. It is a bit unorthodox for factor analysis but is legitimate and does provide a control on county farm frequencies. Rather than factoring a matrix of zero order correlations, a matrix of partial correlations among the eleven indicator variables is generated where total number of farms is treated as a control variable and held statistically constant. Sizes of these partial correlations are found to be somewhat different from those of the transformed variables. However, a principal axis analysis with estimated communalities still indicated three factors. Table 1C contains their promax rotated loadings. Provided that linearity and other statistical assumptions hold for the partial correlations as well as they did for the previous matrices of zero-order coefficients, factors extracted from the partials should be at least as accurate as those from the transformed variables.

The general pattern of high loadings from the partial relationships is that they occur on the same factors as before. Therefore, the dimensions may be labeled essentially in the same manner.

In the first factor, labor resources still load together but less with part owner-operated farms. These positive loadings stand in contrast to the negative loadings from full owner-operated enterprises. The second factor retains its image of partner versus individual owners but, like the first, is somewhat less bound to operator characteristics. Factor three shows slightly more contrast between tenant operations and corporate ownership on one hand, and full or part owner-operated farms on the other. The role of labor resources is relatively unimportant for this third factor.

Controlling for numbers of farms through partial correlations seems to offer a slightly improved simple structure for the rotated factors. Essentially, the loadings of operator characteristics are less apparent in the first and second factors while labor resources shrink from the third. This leaves the respective dimensions as resources, partner versus independent ownership, and tenancy-corporate ownership versus full and part-owner operations.

CONCLUSIONS AND POINTS OF DEPARTURE

Factor analyzing eleven of the more obvious social structure indicators reported by the agricultural census yields one predominant factor. It represents a dimension of numerical strength of farms per county. However, this single dimension clouds potentially meaningful social facets of agricultural structure. Therefore, adjustments have been made to help remove the ambiguity of farm frequencies.

Controlling for total farms per county releases three factors from the transformed and partial correlation matrices. Despite minor ambiguities due to fluxuations among some loadings, these three factors permit similar interpretations. The picture may be clearest for the partial correlation factors rotations. In any event, there are no major contradictions from one set of factors to the next.

Still, the numbers of farms per county is considered to have social significance of its own. Therefore, a tally of a county's farms might be used as a structural indicator variable to compliment those in the three dimensions. Of course these conclusions must be viewed in context of data for one point of time, counties of one state, and farms with sales of $2,500 or more.

A major finding from studies of differentiation in commercial specialties is that patterns of change become apparent in community development and decline. The same may be the case for dimensions of structural differentiation in agriculture. However, two major expansions of the present analysis are needed to establish patterns of agricultural change.

First, these factor index dimensions would have to be analyzed for developmental scales. While developmental scales and factor indexes are not necessarily equivalent, factors may provide a basis for scalable patterns (Wimberley, 1976; 1977).

Second, data from additional points of time should be studied to see if a cross-sectional ordering of scale steps correspond to actual shifts in a county's development or decline. It is one thing to say that scalable categories can be found in survey data; it is another to find that county differentiation rises or falls according to scale steps over a span of time. Agricultural census data do provide a basis for panel research on counties.

Such work is now underway by the first author. Counties from other states are also being considered. If scalable changes become observable in county agricultural structure, this should have importance for agricultural policy. Programs could be oriented toward intermediate and long term stages through which certain types of counties may be expected to move. At minimum, a better understanding of county and of agricultural structure is expected.

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REFERENCES

Durkheim, Emile
1893 The Division of Labor in Society. Trans. by George Simpson New York: Free Press, 1964.

Eberts, Paul R.
1974 Trends in Equality in the Northeast: Major Empirical Dimensions. Ithaca, New York: Department of Rural Sociology, Cornell University.

Foley, John W.
1976 "Community Structure and the Determinants of Local Health Care Differentiation: A Research Note." Columbia, South Carolina: Department of Sociology, University of South Carolina.

Fuguitt, Glenn V. and Stanley Lieberson
1974 "Correlation of Ratios or Difference Scores Having Common Terms." Pp. 128-144 in Sociological Methodology 1973-1974. Herbert L. Costner, ed. San Francisco: Jossey-Bass.

Hadden, Kenneth, and Patricia Harte
1976 "The Differentiation of Service Structure in Non-Metropolitan Counties of the Northeast, 1950-1970." Storrs: University of Connecticut.

Schmidt, Frederick E.
1973 Economy, Polity, and Public Outcomes: An Exploratory Analysis in Counties of the Northeastern United States, 1950-1970. Unpublished Ph.D. Dissertation. Ithaca, New York: Cornell University.

Stuby, Richard G.
1975 "An Indicator of Development: Guttman Scaling of Commercial Differentiation." Washington, D.C.: Economic Research Service, USDA. Paper presented at the San Francisco meetings of the Rural Sociological Society, August.

Wimberley, Ronald C.
1976 "Guttman Scales versus Factor Analysis." Paper presented at the New York meetings of the Rural Sociological Society, August.

1977 "Beyond Reproducibility: Multiple Dimensions and Error in Guttman Scales." Paper presented at the Madison, Wisconsin meetings of the Rural Sociological Society, August.

CHARACTERISTICS OF MINORITY OWNED BUSINESS ENTERPRISES IN SELECTED SOUTH CAROLINA URBAN AREAS

Stephen R. Pettigrew, James E. Thompson, and Jerold F. Pittman[1]

Introduction

Management Training Program

Clemson University and South Carolina State College, the land grant institutions in South Carolina, have recognized their responsibility to serve the particular needs of small minority operated business firms and cooperatives in South Carolina. Minority business in South Carolina is predominantly black and the terms are interchangeable in this paper. These predominantly small, under-capitalized organizations have been operating in a rugged and competitive market without benefit of assistance from most sources. Special individual assistance is required which is beyond the present resources of the land grant universities. To meet this need, a business management training program was initiated through funding by a private foundation and offered through the Cooperative Extension Service.

Initiated in 1975 for a 3-year period, the Management Training Program (MTP) has held classes in 11 locations in the State, with 360 students participating. This paper reports the results of a survey by the MTP staff to identify the characteristics of the potential clientele.

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Methodology

The area of this study includes selected urban areas in two geographic areas of South Carolina. Those counties included were those scheduled for future MTP classes. Individual businesses were canvassed by enumerators through personal visits and mail questionnaire follow-up. Counties selected for the survey were Oconee, Pickens, Greenville, and Anderson in the Piedmont, and Charleston County in the Coastal Plain.

Analysis

Age of Owner

Approximately 68% of the responding business owners were between 30 and 59 years of age. (Table 1) This compares with general labor force characteristics that indicate high participation during these corresponding years. (8, p. 42-147) About 22 percent of the owners were aged 60 years or older. This could indicate opportunities for younger blacks to assume ownership of these established businesses as the present owners retire or otherwise leave. It has also been difficult with the large percentage of owners over 50 years (44.28%) to prepare study material that is relevant and comprehensible to groups with a predominance of older, black business persons with limited exposure in the white dominated general market.

TABLE 1. Age of Owner, Minority Business Survey, South Carolina, 1977[a]

Age	Number of Respondents	Percent
No Response	7	
20-29	20	9.9
30-39	44	21.9
40-49	48	23.9
50-59	44	21.9
60-69	38	18.9
70-Over	7	3.5
Total Respondents	201	100.0

[a] Survey of Anderson, Charleston, Greenville, Oconee, and Pickens Counties, South Carolina, Summer, 1977.

Sex of Owner

A large majority of respondents to the question of owner's sex indicated that black business is predominantly a male domain. Over 81 percent of the respondents were male. Black female operators were almost exclusively confined to the ownership of beauty shops. This is a traditional area of female business experience and does not require large amounts of initial capital investment. Most beauty shops were located in buildings adjacent to the respondent's home, perhaps indicating limited mobility of the female owners.

Educational Level of Owners

Almost thrity-five percent of the respondents to the question of educational attainment, indicated that they had not completed high school. (Table 2) Twenty-six point seven percent of the operators reporting completed high school with the remaining 38.7 percent completing at least some college training. Comparisons with census data are not exact, but only 17.5 percent of the total black population in South Carolina had completed at least 4 years of high school in 1970. (8, p. 42,43) Comparing this to survey results of 65.4 percent with at least a high school diploma would indicate that the black business persons attained higher educational levels than the black population as a whole. Respondents in a Greensboro, N.C. study showed that approximately 87 percent of owners had

TABLE 2. Educational Level of Owners, Minority Business Survey, South Carolina, 1977[a]

Educational Level	Number of Respondents	Percent
No Response	6	
Less than High School Diploma	70	34.6
High School Diploma	54	26.7
Some College	46	22.8
College Graduate	27	13.4
Post College	5	2.5
Total Respondents	202	100.0

a Survey of Anderson, Charleston, Greenville, Oconee, and Pickens Counties, South Carolina, Summer, 1977.

a high school degree. There was also a high ratio of college graduates, possibly due to the large number of higher educational institutions in general and black institutions in particular located in Greensboro. (8, p.29)

Industry Characteristics

An analysis of the business classifications of black business makes obvious the influence of past prejudice from white business. Over 87 percent of the black operated businesses surveyed were in retail trade and personal services. (Table 3) This is a continuation of the trend noted by DuBois (4), Bennett (1), and Coles (3). White pressure prevented balanced participation by blacks in the American economy and there may be danger that black business will suffer through increased inter-mobility between black and white business.

Andrew Brimmer, black member of the New York Reserve Board of Governors, made several observations about black business in traditional and non-traditional roles. He observed that racial discrimination and segregation produced effects quite similar to a protective tariff in foreign markets: two markets emerged. One market for goods (except housing) was generally open to all. The other market, for services, was inaccessible to blacks. Because blacks had little or no access to services such as barber and beauty shops, hotels and eating places, black business concentrated on meeting these needs. Brimmer noted that in 1960, approximately one-third of the 46,500 black business persons were in personal services. This was about double the rate for all self-employed. He concluded that desegregation would worsen black business prospects due to stiff new competition from whites. (2, p. 78-79) Brimmer's opinions were supported in a report in 1962 from the National Conference on Small Business which stated that by limiting their business to blacks, black entrepreneurs were utilizing a short-run, short-sighted strategy. (6, p. 7)

This argument ignores the basic fact that black entrepreneurs have been forced to take what opportunities were available. Grocery stores accounted for 10.7 percent of black business in South Carolina urban areas surveyed, gasoline service stations for 8.3 percent, restaurants and bars for 11.2 percent, beauty and barber shops for 12.2 percent, morticians for 6.8 percent, and mechanics for 5.3 percent. These retail or personal service operations account for approximately 58.9 percent of all respondents in the 5 counties surveyed. By contrast, only 1.9 percent of respondents were engaged in manufacturing.

TABLE 3. Minority Business by Standard Industrial Classification Code[a] (SIC), Minority Business Survey, South Carolina, 1977[b]

SIC	Number of Respondents	Percent
No Response	2	
01-14 Agriculture & Mining	3	1.5
15-19 Construction	3	1.5
20-39 Manufacturing	3	1.9
40-49 Transportation, Communication, & Utilities	4	1.9
52-59 Retail Trade	92	44.7
60-69 Finance, Insurance & Real Estate	5	2.4
70-79 Services	88	42.7
80-89 Health and Educational Services	7	3.4
Total Respondents	206	100.0

[a] Executive Office of the President, OMB, Standard Industrial Classification Manual, 1972, Washington, D. C.

[b] Survey of Anderson, Charleston, Greenville, Oconee, & Pickens Counties, South Carolina, Summer, 1977.

A comparison of the results of the South Carolina study and a study of 193 firms in Greensboro, North Carolina conducted in 1970, reveals similar results with 78.4 percent of the firms classified in retail trade and personal services. Prominent business enterprises in the Greensboro study were restaurants and night clubs, 14.6%; food stores, 8.2%; barber shops, 8.2%; beauty shops, 7.0%; plumbers, 7.0%, and service stations, 5.7%. (7, pp. 6-7) A special nationwide study by the Bureau of Census in 1972 indicated that beauty shops comprised 6.9 percent of black business enterprise, barbershops, 4.6%; service stations, 3.2%; food stores, 6.3%; eating establishments 4.8%, and drinking establishments, 2.4%. (Table 4) (8, p. 14)

In South Carolina, our survey recorded only 1.5 percent of black business in the construction industry while 10.3 percent was indicated by the national estimate. (8, p. 14) The differences are primarily due to the census bureau's access to tax records of individuals to determine the number of private contractors. Survey information from South Carolina was limited, in most cases, to those maintaining store-front operations. Enumerators had extreme difficulty in the location of bricklayers, plumbers, painters, etc., that were self-employed but without a business base of operations.

TABLE 4. Leading Enterprises for Blacks, Comparison of Three Survey Results

Business Enterprise	S. C.[a]	Greensboro[b]	U. S.[c]
Food Stores	10.7	8.2	6.3
Gas Stations	8.2	5.7	3.2
Eating Establishments	6.8	14.6	4.8
Drinking Establishments	4.4		2.4
Liquor Stores	4.4	—	.9
Beauty Shops	7.3	7.0	6.9
Barber Shops	4.8	8.2	4.6
Funeral Services	6.8	2.5	1.0
Auto Repair	5.3	2.0	2.2
Total	58.9	48.2	32.3

a Survey of Anderson, Charleston, Greenville, Oconee, and Pickens Counties, South Carolina, Summer, 1977.

b Greensboro Chamber of Commerce, "Black Owned Businesses in Greensboro", Greensboro, North Carolina, 1970.

c U. S. Bureau of the Census, Minority Owned Businesses, Black, 1972 Survey of Minority Owned Business Enterprises, MB 72-1, U. S. Government Printing Office, Washington, D. C., 1974, Table 1, P. 14-29.

Year Business Operation Was Commenced

Forty-five percent of the respondents to this question indicated that they had started the business within the last 7 years. (Table 5) More than two-thirds indicated that they started their business since 1960. Two main factors influence the large number of new businesses: (1) the high failure rate for small businesses in general, and (2) recent increases in Federal and State efforts to aid minority business.

Firms that are ten years old or less account for approximately 80 percent of business failures in any given year. (5, p. 10) This rapid turnover provides possibilities for new business operations in these or different locations. In addition, as has been noted before, black business is concentrated in retail trade and services which have high intra-industry failure rates. Automotive groups (including service stations), and eating and drinking places have the highest number of failures in the retail trade. (5, p. 9) One would not expect to find a large proportion of long established operators.

Another possible influence on minority firms has been the effects of increased efforts to encourage minority business. Special programs by large corporations to buy from minority business, and Federal efforts to provide financial and technical assistance have encouraged black entrepreneurship. The major thrust of these efforts has been in industries with very little black participation at the ownership level. This may have diverted equitable funding from traditional areas and had detrimental effects on the collective improvement of black business.

TABLE 5. Year Business Started, Minority Business Survey, South Carolina, 1977[a]

Year	Number of Respondents	Percent
No Response	14	
1860-1899	4	2.0
1900-1939	5	2.6
1940-1949	25	12.9
1950-1959	27	13.9
1960-1969	45	23.2
1970-Present	88	45.4
Total Respondents	194	100.0

[a] Survey of Anderson, Charleston, Greenville, Oconee and Pickens Counties, South Carolina, Summer, 1977.

Source of Business Financing

Fifty-nine point five percent of the respondents indicated the use of personal funds as the initial source of investment. (Table 6) Banks and other private lenders accounted for 36.8 percent and government loans accounted for the remaining 3.7 percent. Of the 36.8 percent using bank financing, a majority indicated the use of additional personal funds.

The South Carolina survey showed a higher percentage of black businesses utilized bank financing than was the case in the 1970 Greensboro study. Only 12.4 percent of the Greensboro respondents indicated banks as the source of initial financing. (7, p. 26) Increased use of this source may be attributable to: (1) pressure on white controlled banks to provide the funds to disadvantaged groups, and (2) an attitude change on the part of many black business persons to use debt financing as a financial tool of business. Increased black participation in industries requiring high initial capital outlay could also be a factor in this increased use of private commercial lenders.

TABLE 6. Source of Initial Investment, Minority Business Survey, South Carolina, 1977[a]

Source	Number of Respondents	Percent
No Response	18	
Personal	113	59.5
Bank Loans	70	36.8
SBA Loans	7	3.7
Total Respondents	190	100.0

a Survey of Anderson, Charleston, Greenville, Oconee & Pickens Counties, South Carolina, Summer, 1977.

Sales Volume of Business Firms

Estimates of annual sales volume was the most difficult item of information to obtain from the operators. Of those responding to the question, 24.8 percent indicated annual sales volume under $5,000. (Table 7) Almost 54 percent of the businesses indicated gross sales under $15,000 annually.

This may be partially explained by the large number of hair care operations and eateries characterized by small gross sales. Interestingly, approximately 21 percent of the respondents reported annual sales of more than $50,000. Large grocers, funeral homes, and construction firms were predominant in the upper sales categories.

The Greensboro study showed that 17.7 percent of respondents in that city reported sales under $5,000 with 31 percent reporting sales volume over $50,000. (7, p. 31) Over fifty percent of those interviewed in the Greensboro study did not respond to the question. One reason for a higher percentage of low reported volume could be the large number of new businesses with only part-time business operations during its initial stages.

TABLE 7. Gross Sales, Minority Business Survey, South Carolina, 1977[a]

Sales	Number of Firms	Percent
No Response	55	
Less Than $5,000	38	24.8
$5,000-$9,999	33	21.6
$10,000-$14,999	11	7.2
$15,000-$24,999	23	15.0
$25,000-$49,999	16	10.5
$50,000-$99,999	18	11.8
$100,000-Above	14	9.1
Total Respondents	153	100.0

[a] Survey of Anderson, Charleston, Greenville, Oconee, & Pickens Counties, South Carolina, Summer, 1977.

Other Survey Information

Forty-six percent of those responding to the question of financial investment levels indicated an initial investment of less than five thousand dollars. Twenty-eight percent invested between five and fifteen thousand dollars, and 26 percent indicated more than fifteen thousand dollars in invested capital. This is a further reflection of lower initial costs in traditional black service-type enterprises.

Most of the business owners indicated no previous work experience in the business area in which they were operating. Sixty-eight percent indicated no previous work related experience, and only 32 percent indicated previous experience. This lack of experience will make success more difficult for the owner and is a leading factor in business failure.

The most surprising results were those about problem areas in the business. Most operators indicated that they had no problem areas which required assistance. Of the problem areas mentioned, accounting, record-keeping, and cash flow problems were the most frequent. Approximately 25 percent of those responding to the question identified one or more of these areas. Approximately 85 percent had not received any assistance at all. Major sources of assistance identified were the Office of Minority Business Enterprise contract agency in South Carolina and the Small Business Administration. In practically all of these instances, SBA contact was initiated through the OMBE agency.

Only one businessman indicated receiving assistance from the Clemson Cooperative Extension Service and only 4 owners had utilized other educational institutions. Of those receiving assistance, 63 percent indicated general satisfaction with the assistance. Dissatisfaction with assistance was associated with lack of follow-up from agencies, bureaucratic red tape, and lack of lendable funds. Eighty-five percent indicated a willingness to attend business management training classes in their city.

Summary

Minority business in South Carolina is predominantly black. Blacks have participated with the white economic system since our country's founding but not on par with their white counterparts. Black business has been generally limited to meeting the needs of the black community that white businessmen did not want. Efforts have been and are now being made to assist and nurture black and other minority businesses. Financial assistance is being provided by public and private lenders and technical assistance by governmental and educational institutions. The MTP is one such technical assistance program in South Carolina. In order to better serve its clients, the MTP studied black businesses in several South Carolina counties.

A survey of these businesses indicated that most of them were operating in retail or personal services industries. This closely parallels the pattern of black business on a national scale. Food stores, hair care, eating and drinking establishments, gas stations, and morticians accounted for over one-half, 58.9 percent, of businesses surveyed. Manufacturing, on the other hand, had very few businesses identified, only 1.9 percent of the total.

Forty-five percent of respondents were over 50 years of age with 22 percent aged 60 and older. Approximately 65 percent indicated having a high school diploma. Most owners, 68 percent, indicated no previous experience in the business.

Forty-five percent of the respondents indicated they had started the business within the last 7 years and more than two-thirds had begun since 1960. Factors which could influence this large number of recent business starts are high failure rates in the industries where blacks are concentrated and recent federal efforts to encourage minority business.

Most black businesses indicated they had not utilized commercial lenders to provide start-up capital. Only about four percent of the respondents indicated the use of Small Business Administration funds. Forty-six percent of responding businesses indicated less than five thousand dollars in start-up capital.

Eighty-five percent indicated they were willing to attend training classes in their city, but most indicated no problem areas requiring assistance. Approximately 25 percent indicated one or more problems that needed assistance. Of those that had sought assistance, major sources were the Minority Development and Management Association and the Small Business Administration with 63 percent indicating satisfaction.

Information from this study could prove useful in future studies or work efforts initiated to aid the black business community. No specific questions or answers are provided, only necessary background information to aid in future decision making processes.

References

1. Bennett, Lerone, Jr., The Shaping of Black America, Johnson Publishing Company, Inc., Chicago, Illinois, 1975.
2. Brimmer, Andrew F., "Profit-vs-Pride; The Trouble With Black Capitalism", Nation's Business, Vol. 58, May, 1969.
3. Coles, Flournoy A., Jr., Black Economic Development, Nelson Hall, Chicago, Illinois, 1975.
4. DuBois, W. E. B., ed., The Negro In Business, AMS Press Inc., New York, N. Y., Reprint 1971, (Original 1899).
5. Dun and Bradstreet, Inc., Business Economics Department, The Business Failure Record, 1973, New York, N. Y., 1974.
6. Fitzhugh, H. Naylor, ed., Problems and Opportunities Confronting Negroes in the Field of Business, Report on the National Conference on Small Business, U. S. Department of Commerce, Washington, D. C., 1962.
7. Greensboro Chamber of Commerce, Black Owned Businesses in Greensboro, Greensboro, North Carolina, 1970.
8. United States Department of Commerce, Bureau of The Census, Census of Population: 1970 General Social and Economic Characteristics, Final Report PC (1)-C42, South Carolina, U. S. Government Printing Office, Washington, D. C., 1972.
9. 1972 Survey of Minority Owned Business Enterprises, Special Report, Minority Owned Businesses-Black, MB72-1, U. S. Government Printing Office, Washington, D. C., 1974.

Section L

RURAL INSTITUTIONS

"Transit Needs of the Rural Elderly." Charles B. Notess, Winthrop College.

"Social, Health and Environmental Factors Associated With 'Postneonatal' Loss Rates in Mississippi." Ellen S. Bryant, Mississippi State University.

"Health Historical Finding Among Low Income, Black Families." Eunsook T. Koh and Edwina D. Gray, Alcorn State University.

"Anomia, Role Strain and the Female Family Head." Annetta S. Richardson and Joseph J. Molnar, Auburn University.

Transit Needs of the Rural Elderly*

Charles B. Notess**

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Introduction

In our rapidly changing society, particular groups of people become the victims of change and frequently the institutional adaptations aimed at ameliorating the impacts of change take some time to develop. An interesting example of attempts by the federal government to overcome such "cultural lag" is the federal response to transportation needs of the rural elderly.

The private auto has enabled our ecological communities to become dispersed. At the same time, increasing proportions of elderly people do not live with their children. The increased public services which have become accepted as a basic right by many citizens are often centralized at the county and regional levels. For example, social welfare services are administered at the county level whereas some community action, vocational rehabilitation and human development services, in rural areas, are organized at the multi-county level.

These trends have led to a spatial isolation of people who do not have easy access to the ubiquitous private automobile. Social service providers are aware that a major obstacle for many of their elderly clients in rural areas is to find transportation to doctors, stores, social service agencies and recreation centers. To help overcome this obstacle, the federal government, since the early 1960's, has tried a variety of transit assistance programs many of which use ten to fourteen-passenger vans to bring elderly people to congregate meals, health clinics, food stamp offices and senior citizen centers. In some cases, the government has paid for taxi fares. In general, these transit services have been costly, in some cases costing more than $10 per person trip. To a large extent the high cost is attributable to low vehicle utilization in terms of idle time and empty seats.

Funding for the various transit services has been segmented at the federal level with the U. S. Department of Labor, HEW and DOT each involved in their own programs. Fragmentation at the federal level has led to fragmentation of transit services at the local level. To date, experience with these systems has shown that in only a few rural counties do more than three percent of the elderly population use such transit services, whereas the potential demand or market for such service ranges from twenty to thirty-five percent of the elderly population. (Notess, 1977).

Many observers have concluded that lack of transportation to social services is the major reason why such small proportions of elderly people participate in social service and recreation programs. Yet vehicle utilization is low.

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It is the contention of this writer that an important consideration, often overlooked in transit studies, is the attractiveness of the social and recreational services which the transit rider is assumed to desire.

This paper summarizes important operational aspects of this transportation problem and its context to provide the reader with a background that will help him to understand how technical, social and economic factors can combine to create a problem which is difficult to solve in a piecemeal fashion. The lifestyles of elderly people are described by use of a typology that is specifically relevant to explaining the nature of transit demand. The interactions between transit service and the attractiveness of social and recreation service delivery systems are shown to be important considerations when coordinating the two services to reduce costs and serve a greater portion of those in need.

Travel Needs of the Elderly

The following summary of transit needs of the elderly was taken from Notess (1977) which contrasted rural and urban travel characteristics of the elderly. An upper bound to frequency of travel was obtained by examining the travel patterns of people who have minimal restrictions on travel. These frequencies, measured in terms of trips per month, were described from data obtained in cities, where those who can not find a ride can walk or take a bus, and from data for drivers who have access to use of a car. Appendix A, taken from Notess (1977) summarizes the monthly travel frequencies of elderly people in a rural area and an urban area.

A lower bound on travel by the elderly is provided by the portion of elderly who seldom (a few times a year) or never go out. Approximately one sixth of the elderly people fall into this category which includes the bedridden, the physically handicapped and some who are active in their home and yard, but have little desire to travel beyond their yard.

The first group of active elderly drive themselves in rural areas. They drive to the store, to church, to visit and to club meetings. About 20 to 50% of the elderly fall in this category depending of the median income of elderly households. (Burkhardt, 1973) Most of the elderly men fall into this group. Most elderly drivers go out almost daily and are in their 60's and 70's.

Elderly people who do not fall into either of the above groups comprise a third group who, in rural areas, obtain rides with someone else. In large cities this third group can be split into two approximately equal parts--the willingly dependent and the independent. The former ride with friends, husband or other relatives and most of them prefer to continue doing so. The other half take advantage of alternative opportunities to go by bus, walk or taxi.[1] In this way the latter group maintain their independence.

On the basis of the approximately even split of the third group in urban areas, it might be hypothesized that a similar split would occur in rural areas if there were alternatives. There is no alternative however, because there are no bus lines and walking is too far in rural areas. Taxi service beyond the village line is too costly for all but a few people.

It is likely that the majority of transit service users would come from that portion of the third group who have difficulty in finding rides and who prefer to be independent and not burden friends and kin. In those counties where 20% of the elderly drive themselves, half of the residual group includes 32% of all elderly residents. In more prosperous counties where 50% of the elderly drive themselves, half of the residual group includes 17% of all residents (Notess 1977).

A small percentage of drivers and the stay-at-home groups would use attractive transit services. Thus it is hypothesized that the potential demand for transit service is in the range 20 to 35% of all elderly residents who would ride the vans if transit service were attractive and if there were attractive destinations to go to. The actual percentage of elderly who ride depends on their perceptions of these two types of sttractiveness.

The Attractive Power of Social & Recreational Services

The attractive power of social and recreational services depends upon a number of factors. Three will be summarized here: the nature of the service as it affects frequency of travel, upper bounds to participation rates, and outreach activities.

The most frequent form of service is the daily congregate meal. This activity generates twenty journeys from the home each month for those who participate regularly. In rural counties the proportion of elderly attracted to daily meals ranges from under 1% to as high as 10% in a few counties. At the other extreme is travel to the doctor. Some people must go for a weekly or monthly treatment, but the overall average is about one trip each month for health care. This average is based on the total population of elderly including those who don't go to the doctor (Notess, 1977). Trips to purchase food stamp allotments or to tend to other personal business occur a few times each year at the most. Trips to recreational activities vary from twice weekly in a few cases to weekly and monthly programs in most cases.

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[1] It is likely that more than half of the elderly in this residual group would prefer to be independent, but this writer has not found data that is detailed enough to support a more accurate approximation. Carp found that about one fourth of the elderly in San Antonio would visit, attend church and go to meetings more often if transportation were "better" (Carp, 1972).

Thus the amount of travel each month depends upon the particular mix of social and recreational services available to elderly in a particular rural county.

A survey of the literature on participation of elderly people in recreation activities revealed that seldom do more than ten percent of the elderly take part. Even in urban neighborhoods where ethnic background is homogeneous and provides a focus for group get-togethers, maximum rates found in the literature did not exceed twenty percent. These rates were for Jewish elderly in St. Louis and Baltimore (Blonsky, 1973; Dye et al, 1973; Guttman, 1973) and for Lutherans in Minnesota (Rose, 1963).

Outreach activities range from negligible efforts found by this writer in some rural Virginia counties to well publicized door-to-door surveys in other counties.

One reason why some county programs are not attractive is that the service workers are not adequately motivated to provide attractive services attuned to local needs and to publicize them effectively. We must consider the incentives which motivate a person to administer a program. If a hot lunch program serves 30 people a daily meal, there is much satisfaction for the staff when they see the happy faces of friends chatting and eating together. To expand the program, in many cases. means that the staff would have to find a larger room, hire more help and confront the problem of transporting 20 more people every day. In many cases, the trouble isn't worth the effort for people whose only reward for the increased complexity of their job, is more problems. Some counties don't have their programs organized in a way that provides sufficient incentives to provide attractive programs.

There is an important impedance or obstacle that enters the picture between provision of social services and participation in them. It is pride; pride in being self sufficient and independent. Some elderly won't go to a hot lunch program if most of the people there have lower social status than they. In one city, a nutrition site is losing attractiveness since a program for mentally retarded was started at the center. The elderly don't want to be classified together with the retarded, and apparently, the public image of that recreation center is tainted by the retarded who go there.

In one city in the Carolinas, riders asked the driver to let them off at the library and walked to the food stamp office a block away rather than be seen when they were getting off the van in front of the food stamp office.

Pride affects attitudes toward transit use in addition to affecting attitudes toward social recreation activities. If transit use is associated with an image of charity for the poor, some elderly people, who take pride in their self sufficiency, won't ride the vans.

On the other hand, growing old means growing lonely for many elderly people. Social interaction can play a vital role to prevent disengagement from the community and to maintain healthy states of mind. An illustration of the importance of sociability is the number of people who drive their own car to congregate meal programs. These social occasions are not only for the low income elderly who are isolated.

The foregoing illustrations point out the need to consider the effects of attractive power of services delivered when estimating the need for special transit services. Implicit in this need is the desirability of coordinating planning and design of social and recreational services with that of transit services.

Operation of Transit Services

In rural counties, special transit vehicles are small because it is difficult to fill all the seats in 40-passenger buses. Because of the small number of riders per trip, the driver costs amounts to about half of the operating expenses. A quarter of the expenses are consumed by fuel, tires, maintenance, oil and depreciation while a final quarter goes for administration, dispatching and insurance. The key to cost-effective transit service is "load factor" which is measured in terms of the percent of seats which are used during an average circuit of each bus. Typical circuits are an hour in duration, cover 35 miles and carry three to five persons, which is less than half the capacity. Because the load factors are so low, the cost per person trip in some cases averages several dollars. This is less than taxi costs in many rural areas, but is higher than conventional fixed-route bus costs. If load factors can be improved to average over 70%, door-to-door transit service for low density areas would become economically feasible in the light of current standards, around $1.50 per person trip (one-way) (Notess, 1973 and Kidder, 1976).

If we examine the possible ways to cut costs, using the above cost breakdown as a guide, it becomes obvious that savings in fuel, maintenance, depreciation, insurance and driver costs in general will only cut operating costs to no more than 50% in most cases. However, if load factors can be increased by a factor of three or more and if vehicle utilization can be increased along with driver utilization to at least eight hours a day, then costs per person trip, in typical cases, can be cut to as much as a half to a fifth of the cost of inefficient systems.

Thus, the key to cost savings is to increase the passenger load factors and hours per day of vehicle and driver utilization. To achieve this type of operation it is necessary to share and coordinate use of vehicles among several types of trip purpose or traveler characteristics.

Recent trends in federal aid to transit programs in the past few years have tried to demonstrate savings in operating costs by increasing load factors and vehicle utilization in addition to reducing per-mile operating costs. Demonstration projects explored the advantages achievable from coordinating transit service among the major generators of transit demand, which are social service agency trips, health-care trips, headstart trips and senior-citizen-program trips. At the present time only a small number of counties and cities have achieved effective levels of coordination.

Obstacles to Coordination

Major obstacles to interagency coordination of travel and of the scheduling of activities in terms of time and space, institutional restrictions which are perceived to limit the mixing of clients from different agencies aboard vehicles funded by one agency. Experimentation to demonstrate the results achievable by waiving some of these institutional constraints is still under way in a number of states (McKelvey, 1977).

Some important social aspects of coordination have yet to be clarified. It has proven difficult to get physicians and social service agencies to schedule appointments and programs according to times or days when a particular sector of a county has its weekly transit run. Another example is the unwillingness of some social service agencies to give up their vans to a centralized agency for a number of reasons.

1) Some elderly clients will only ride with their case worker or a driver they know.
2) Underpaid social service workers and volunteers and the agency as a whole obtains substantial non-monetary (human or social) rewards by the visibility associated with driving a van with the agency name on its door.
3) The agency can demonstrate in very personal ways its commitment and concern to particular new clients by using their van, driven by a knowledgeable case worker, to respond quickly to particular needs.

Recent Trends

The high cost of current methods for serving transit needs of the rural elderly can be attributed to the centralization of social services and recreation activities and the inefficient utilization of transit vehicles and drivers. It appears at first glance that the key to lowering transit costs is to increase vehicle and driver utilization. This is only a part of the answer.

The attractiveness of social and recreational activities is an important factor which affects the level of demand for transit services. Although a recent GAO publication could not identify specific statutory or regulatory restrictions that prohibit coordination and cooperation of transit services, it found that there was confusion at all levels of government about how far coordination could go.

This paper has presented a brief summary of some important considerations that affect transit delivery. Coordinated services might cut down costs in some cases, but this writer urges caution that we don't throw out the baby with the wash water and reduce the effectiveness of social service delivery systems by overcentralizing transit service.

Research is needed to describe the effects coordinated transit service might have on the social service delivery systems. There is very little research available on this topic, in part because of interagency jealousies, turf protection and funding of services along categorical lines.

A bit of hope lies in the creation of interagency councils at state and local levels. For example, the state of South Carolina organized an interagency council in September 1977. Another example that gives a ray of hope is demonstration of a transportation broker concept wherein information, arrangements and scheduling suggestions are provided by a central broker staff.

Conclusions and Recommendations

The potential demand for travel assistance among the elderly comes from a range of from 20 to 35% of the elderly who, in rural areas have no alternative. but to try and find rides with a friend or relative. This particular group does not prefer to be dependent in this way and some of them travel very infrequently for this reason. When current usage of trips to social service and recreational services are considered, the demand is considerably less, under ten percent at the present time. The reason for this is in part that the attractiveness of these types of activities and services is not sufficient to generate more travel.

As the life styles of elderly people change because their relative number in the population is increasing and as their level of education and quality of health improve, the demand for and provision of attractive services is likely to increase.

At the present time, if we assume that the potential demand for such services is about ten percent, the fact that many rural counties serve less than three percent indicates that the ridership could increase more than threefold if attractive services and transit services were available.

Appendix A: Travel Characteristics of Rural and Urban Elderly
(Notess, 1977)

Table 1a shows the approximate number of journeys per month made by the average elderly person in urban and rural samples. The urban values were estimated from Carp's published data by transforming all trip frequencies into common units of trips per month (Carp, 1970 and Carp, 1972). The rural data was obtained from a survey of elderly on social security rolls and living in Montgomery County, Virginia (Notess, 1977)

The tabulated data shows that the urban elderly traveled twice as often for visiting and church as those in the rural sample, less often for medical care and over three times as often for groceries.

Table 2 shows the modes of travel used for different trip purposes. The information on travel mode is for travelers only, and shows the percentages who drove, rode as passengers, went by taxi or other modes, including walking.

The following discussion describes important characteristics of travelers from the urban and rural samples. Only a small part of the data from these samples is presented in Tables 1 and 2.

Those rural elderly who did go shopping for groceries, 78% of them did so, made an average of 1.8 journeys per month (Tables 1b & 1c). Very few went weekly, or more often (less than 5% did so). Ninety-six percent of the rural elderly shopped by car (Table 2). In contrast, Carp's data shows that 38% walked, took a taxi or went by bus in San Antonio (Table 2). The majority of this latter group (85%) walked. Walkers must shop more frequently because it is difficult to carry a two-weeks supply of groceries by hand in one trip.

A similar breakdown by travel mode was found for medical trips as for grocery trips. However, the frequency of medical travel was lower; 0.8 journeys per month for the urban sample and 1.3 for the rural sample (Table 1a). The higher rural frequency was a surprise. It is possible that the different wording of the urban and rural questions caused the difference. The urban question apparently focused on trips to the doctor, whereas the rural one focused on medical trips, which might have been interpreted as including trips to the drug store, hospital and clinic.

Carp's data indicates that 28% saw a physician once a month or more often. About one fifth of these went weekly or more frequently.

Church attendance for both the rural and urban samples was primarily once per week for most of those who went. (Table 1a). Half of the rural elderly never attend church compared to a third of those in San Antonio (Table 1c).

Urban people visited mostly with friends, many of whom were neighbors. Carp's data indicated that 42% walked to visit with friends several times each week. In rural areas, those who visited went twice a week, on the average. Since few rural neighbors are within easy walking distance, most visits were made by car. Table 2 shows that 92% did so. Frequent rural visiting was found mostly in the towns rather than in open country and the mode was driving.

A small fraction of the elderly traveled almost daily. Carp's data indicates that approximately one sixth of the urban sample traveled that often; (15% did so to visit friends, 5% to shop and about 5% to visit relatives)--(Carp, 1970). The rural sample indicates that 9% went out daily to visit. All of these daily visitors drove themselves. Thus the relative size of the active elderly group in rural areas is about 1/2 that of the urban areas.

The greater difficulty of travel in rural areas has led, over the years, to lifestyles that are less active, in terms of travel from the home. This difference might lead to a lower travel demand even if special transit services were made very convenient. Rural folk are more home centered and it is difficult to change life styles, based on long isolation, in a short time.

TABLE 1 COMPARISON OF URBAN AND RURAL TRAVEL BY THE ELDERLY

Trip Purpose	Urban Sample[1]	Rural Sample[2]
a)	Average Number of Journeys[4] per Month (includes those who never go out)	
	San Antonio	Southwestern Virginia
Grocery Shoppong	6.2	1.4
Visiting	11.0	6.0
Church	3.2	1.6
Medical Care	0.8	1.3
b)	Average Number of Journeys per Month (excludes those who never go out)	
	San Antonio	Southwestern Virginia
Grocery Shopping	7.6	1.8
Visiting	18.3	9.5
Church	4.8	3.1
Medical Care	.9	1.8

c) Percentage of All Elderly Who Never Go Out

	San Francisco	San Antonio	Southwestern Virginia
Grocery Shopping	7	18	22
Visiting	9	40	37
Church	24	33	40
Medical Care	5	13	28

1. Adapted from Carp's study of 709 elderly in San Antonio, and 899 in San Francisco (Carp 1970)

2. This data was collected during an SSI-Alert Survey Spring, 1975, in Montgomery County, Virginia. Sixty-five percent of the 103 elderly sampled lived in open country. Twenty-five percent lived in the two towns of over several thousand population each and ten percent lived in small villages of under 1,000 population. The 103 elderly were identified from social security rolls and lived along roads surveyed May and June 1975. (Notess, 1977)

3. Adapted from Carp's study (Carp, 1970)

4. A journey represents a round trip which has at least two one-way trip segments or legs. In this report the word "trip" is defined as a one-way leg of a journey made by one person.

TABLE 2 MODES OF TRAVEL

Percentage of Travelers Using Each Mode

	Urban Sample[1]			Rural Sample[2]		
	Drive	Ride	Bus, Taxi Walk, Other	Drive	Ride	Bus, Taxi Walk, Other
Grocery Shopping	31	31	38	36	60	4
Visiting	28	32	40	37	55	8
Church	26	32	42	35	59	6
Medical Care	28	32	40	37	61	2

1. Adapted from Carp's Study of 709 elderly in San Antonio (Carp, 1970)

2. This data was collected during an SSI-Alert Survey Spring, 1975, in Montgomery County, Virginia. Sixty-five percent of the 103 elderly sampled lived in open country. Twenty-five percent lived in the two towns of over several thousand population each and ten percent lived in small villages of under 1,000 population. The 103 elderly were identified from social security rolls and lived along roads surveyed May and June 1975 (Notess, 1977)

References

Blonsky, L.E.
1973 "An Innovative Service for the Elderly", *The Gerontologist* Summer, 1973. pp. 189-196.

Burkhardt, Jon E., Eby, Charles L., et al.
1973 *A Study of the Transportation Problems of the Rural Poor* Resource Management Corporation, Bethesda, MD., Jan., 1973

Carp, F. M.
1970 "The Mobility of Retired People", in *Transportation and Aging - Selected Issues*, Ed. by Cantilli, E. J. and Shmeltzer, J. L.: proceedings from Interdisciplinary Workshop on Transportation and Aging, Washington, D.C., May24-26, 1970. Published by HEW, Social and Rehabilitation Service, Administration on Aging (SRS) 72-20232, 1972.

1972 "The Older Pedestrian in San Francisco", in *Transit for the Poor, the Aged, and the Disadvantaged*. Highway Research Record No.403 National Research Council, Washington. D.C. 1972.

Dye, D., Goodman, M., et al.
1973 "The Older Adult Volunteer Compared to the Non- Volunteer" *The Gerontologist*, Summer 1973, pp. 215-218.

Guttman, D.
1973 "Leisure - Time Activity Interest of Jewish Aged", *The Gerontologist*, Summer, 1973, pp. 219 - 223.

Kidder, A.E.
1976 "Economics of Rural Public Transportation Programs", Transportation for Elderly, Disadvantaged, and Handicapped People in Rural Areas, Transportation Research Record 578, National Research Council, 1976.

McKelvey, Douglas J., Ed.
1977 *Proceedings of the First National Conference on Rural Public Transportation*, U.S.Department of Transportation, DOT-TST-77-11 Washington, D.C. 1977

Notess, C. B.
1973 "Trends in Urban Transportation", *American Society of Civil Engineers Transportation Engineering Journal*, August, 1973.

1977 *Rural Elderly Transit Markets* a paper presented at the Oct. Annual Meeting of the American Institute of Planners, in Kansas City. Available from the author.

Rose, A. Ed.
1963 *Aging in Minnesota*, University of Minnesota Press.

SOCIAL, HEALTH, AND ENVIRONMENTAL FACTORS ASSOCIATED WITH POSTNEONATAL LOSS RATES IN MISSISSIPPI

A paper prepared for presentation at the
Southern Association of Agricultural Scientists,
Rural Sociology Section, Houston Texas
February 6-8, 1978
By Ellen S. Bryant

This report is drawn from an extensive study of infant mortality rates in Mississippi Counties. (Bryant 1976) Partly because of applicability to the topic addressed, it will be limited to findings on white postneonatal losses--that is to those occuring to white infants between the ages of one month and one year.

It is because the postneonatal infant is more directly accessible than the neonate to all environmental assaults--social, physical and biological--that the findings on the mortality of this age group that will be presented here. Findings on black postneonatals are omitted because of time and space limitations. Epidemiological studies repeatedly point out that the etiology of infant death varies with the age of the infant. At the neonatal ages deaths are almost entirely the result of factors which existed during the prenatal period. After the first month, the infant's survival is largely dependent on factors associated with the immediate social and physical environment in which the child is living. As infant mortality comes under the control of modern technology and standards of living it is the postneonatal rates that are reduced first.[1] (Pressat 1969)

Mississippi is a particularly germane state for studying infant mortality. First, it has long had some of the highest infant death rates in the nation. Second, it represents an extreme case of the post World War II trend in the United States--that is, the leveling of the nation's earlier downward trend in infant loss rates at the same time that other developed industrial nations continued to have dramatic improvements in their loss rates. (Chase 1972, Curran 1966), See Table 1.

Methods

Several research procedures were used. First, state level comparisons were made of annual rates for Mississippi, Texas, Louisiana, Arkansas, Tennessee, Alabama, and Georgia for the years 1948 through 1972. Second scattergrams of annual rates for Mississippi counties by race were studied, and third regression equations using 4 or 5 year averages of annual rates centering on 1950, 1960, and 1970 were run, using a computer package, SELECT, which builds a regression equation of successively larger numbers of variables without "locking in" previously selected variables. (Cuthbert and Wood 1971; Hocking and Leslie 1967; and Hocking, Speed and Hackney 1976). A total of 35 independent variables were introduced into the computer program. These are identified in the Appendix.

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[1] For instance, between 1945 and 1950, United States postneonatal rates declined by 37.8 percent while the neonatal ones declined 15.6 percent. (Wright 1972)

TABLE 1.-NEONATAL AND POSTNEONATAL MORTALITY RATES IN MISSISSIPPI, 1937 to 1972, BY RACE

Year	White		Nonwhite	
	Neonatal	Postneonatal	Neonatal	Postneonatal
1937*	32.4	18.0	32.0	34.6
1938*	31.1	19.0	31.7	30.5
1939*	31.3	17.0	31.3	30.3
1940*	29.4	17.0	31.7	29.2
1941*	30.4	15.7	30.6	30.5
1942*	25.2	12.6	29.0	25.4
1943*	28.6	12.6	27.1	24.4
1944*	25.4	12.6	25.1	23.9
1945*	26.6	9.5	24.1	20.6
1946*	26.7	6.6	24.2	16.6
1947*	23.1	8.0	24.9	17.0
1948*	26.0	7.3	25.3	16.3
1949	23.0	8.3	25.0	20.8
1950	20.6	7.5	23.8	18.8
1951	22.5	6.8	27.9	19.2
1952	20.7	6.4	29.6	20.7
1953	22.4	6.1	27.8	20.5
1954	20.9	4.9	25.6	19.3
1955	19.1	5.6	25.6	20.8
1956	21.3	5.6	24.9	21.5
1957	20.1	5.6	26.1	20.0
1958	20.1	6.2	28.9	24.2
1959	18.4	5.8	28.7	22.8
1960	20.2	6.0	29.6	24.8
1961	18.6	4.9	27.8	22.2
1962	20.0	5.6	28.8	23.7
1963	17.5	5.2	32.1	25.7
1964	17.7	5.4	29.7	23.4
1965	20.1	5.3	29.2	25.9
1966	17.0	5.9	28.9	23.5
1967	17.1	5.5	27.8	19.6
1968	18.6	4.1	30.0	17.8
1969	18.4	3.4	27.1	15.5
1970	15.7	3.6	25.2	14.5
1971	15.2	3.0	23.8	14.6
1972	15.2	4.1	21.4	11.4

SOURCE: Annual Reports of the Mississippi State Board of Health, (Jackson, Mississippi), for the years indicated.

*Neonate mortality for these years is for those occurring at age under 30 days. After 1948, neonatal mortality has been defined as deaths occurring under the age of 28 days.

Theoretical Framework

The causal analysis of the decade-centered analyses was approached with a theoretical model derived from a relatively extensive review of the literature. (Bryant 1976) It was hypothesized that causes of infant deaths could be typed and that these types could be ranked in terms of salience or order of permanent entry into the selected equations. Assuming the existence of a relatively modern, industrialized society the following six ranks (from high to low) were set up:

1. SS--Social Situation: Factors in the immediate social and living environment of the infant
2. SB--Social Background: Factors on which the SS Factors are based
3. PE--Physical Environment: Possible contaminants in the physical environment
4. HC--Health Care: Measurements of the availability and use of health care services
5. DL--Developmental Level: Factors indicating the urbanization and industrial levels of the counties, including typologies
6. PB--Prenatal Background: Indicators of a residual health problem from the prenatal period

Findings

The exploratory phases--that is the comparison of state level and county level peaking tendencies for the years 1948 through 1972 --yielded a few interesting findings.

The state comparisons did not uncover an impressive pattern of simultaneous rate peakings. However the state with which Mississippi shared the greatest number of peakings was Arkansas. This state is geographically and economically similar to Mississippi and thus the parallel trends are suggestive.

The scattergram plots of annual county rates for the 24 years revealed that the only years in which white postneonates peaked in five or more counties were 1949, 1953, 1964 and 1966; and the only one of these years which replicates a state level peak is 1953. It is perhaps worth noting that four of these five (1953) are located on the Mississippi River and one is one county east of the river. A few counties exhibited multiple yearly peaks. When these were identified on a map, they tended to concentrate in the western half and the northwest quadrant of the state, especially on the fringes on the Delta where loess bluffs form an orographic barrier. Whether or not these patterns are meaningful or coincidental is very hard to say. The data are very thin.

Decade-Centered Regression Analysis

Perhaps the single, most important finding to come out of the regression analyses, which are summarized in Table 2, is that the equations for 1950, 1960 and 1970 each selected a different set of variables and none of them identified the same variable as most salient, although in two of the three years an SS variable came in first.

The variables are listed in Table 2 according to their order of entry into the selected equations. The cut off point in terms of variable selection was based on joint examination of MSE (mean square error) and C_p values with the objective of minimizing both. (Bryant 1976) Usually enough variables were admitted to allow minimizing MSE even though C_p was exceeding its minimum. Variables selected by the minimum C_p equation are starred in the table. Summaries giving model size, R^2, MSE, and C_p values are at the bottom of the table for both the Selected model, and the Minimum and Maximum C_p models. The F ratios compare the Selected to the Maximum C_p equations.

Examining the statistics at the bottom of the table it can be noted that the largest R^2 was achieved with 1950 data (.556) and the lowest in 1960 (.424). Second, very little improvement in R^2 would have resulted had all variables been used. Therefore it can be assumed that the selected models include all the important variables and possibly some that are relatively unimportant, the F ratios indicate no difference. Had the models with the minimum C_p been selected only the variables which have asterisks would have been used. In most cases these variables are also those which entered first and permanently in the Selected model.

Another feature of the selected models should also be noted. In the process of selecting the best set of variables of a given size, the program frequently deletes a variable and selects two other variables for the best next size model. Sometimes variables enter and leave the equation several times before making a permanent entry. The result is that sometimes two, three, and even four new variables enter the equation simultaneously. Such new multiple selections may indicate simply a better set of variables, or occasionally, colinearity between the variables. Both of these results are manifested in the models. Because of the great amount of detail in Table 2, review of the findings will be limited to the variables identified as most important by both the Selected and Minimum C_p models.

First Variables, 1970 and 1950

In 1970 and 1950, SS variables come into the equations first, but the second ones to enter are from those classed as more remote in the hypothesized causal model.

CHLD, a measurement of the average number of preschool children in the family, is most salient in 1950. It enters the 1960 equation but in position 15-16. It is not a factor in 1970. However, for the earlier two years, the more preschool children in the family, the higher the postneonatal loss rate. PLMB, the percent of houses with adequate plumbing, is first in 1970 and negative as would be expected. The only other equation which identifies it as an important factor is the 1950 Selected model, where it is average in sali-

TABLE 2. WHITE POSTNEONATAL MORTALITY
SUMMARY REGRESSION STATISTICS FOR EQUATIONS AND INDEPENDENT VARIABLES LISTED BY ORDER OF PERMANENT ENTRY

1970			1960			1950		
	Coefficients			Coefficients			Coefficients	
Variable	r	Beta	Variable	r	Beta	Variable	r	Beta
1.			1-2.			1.		
PLMB*(SS)	-.296	-.3623	PHYS*(SB)	.022	-.6009	CHILD*(SS)	.420	.2752
2.			SALES*(SB)	-.174	.4349	2.		
VTL*(PB)	-.276	-.3315				COTN*(PE).	.373	.8935
3.			3-4.			3.		
MDWF*(HC)	.150	.2693	TT3*(DL)	-.164	-.3680	WAGE*(SB)	-.188	-.4424
4.			TR2*(DL)	.019	.5735	4.		
BRRT*(SS)	.022	.4847				RAIN*(PE)	.224	.2117
5-6.			5.			5.		
DNS*(DL)	-.163	-.8019	RAIN*(PE)	.097	.2615	ILLG*(SS)	.246	.1930
MFG*(DL)	.082	.5653	6.			6.		
7-8.			VTL*(PB)	.166	.1902	TT2(DL)	.153	.1225
UNMP*(SS)	.186	.3095	7-8.			7.		
BLK*(SB)	.013	.3951	UNMP(SS)	.019	-.2128	UNMP(SS)	-.013	-.2019
9.			GROW(DL)	-.105	-.5625	8.		
TT2*(DL)	.087	-.1533	9.			SALES(SB)	-.186	-.3343
10.			WAGE(SB)	.028	.2844	9.		
SALES(SB)	-.113	.3553	10.			PLMB(SS)	-.202	.6478
11-12-13.			TC2*(DL)	-.241	-.2029	10-11-12-13.		
COTN(PE)	-.005	-.8219	11-12-13.			DNS(DL)	.013	-2.5272
TC1(DL)	-.026	.4063	COTN(DL)	.169	.1811	TAGS(DL)	-.040	2.4494
TC2(DL	.143	.2287	TT1(DL)	.071	.1807	TAGP(DL)	.162	.4742
14.			TR1(DL)	-.038	-.1612	TR1(DL)	-.075	-.1747
SES(SS)	-.230	-.3806	14.			14-15.		
15-16.			EQAL(SS)	-.089	-.1898	SES(SS)	-.267	-.3678
URB(DL)	-.153	.2798	15-16.			MFG*(DL)	-.149	.2427
VALU(DL)	-.028	-.2019	CHLD(SS)	.160	.2049	16.		
17.			VALU(DL)	-.058	.1875	JOBS(SB)	-.200	.2201
FARM(PE)	.014	.2568	17.			17.		
			TAGS(DL)	-.025	.2407	TC2*(DL)	.019	.0892
			18.					
			URB*(DL)	-.138	-.1893			
			19.					
			TC1*(DL)					

	Equations				Equations				Equations		
	Selected	C_p			Selected	C_p			Selected	C_p	
		Minimum	Maximum			Minimum	Maximum			Minimum	Maximum
Model Size	17	9*	35	Model Size	18	9*	35	Model Size	17	7*	34
R^2	.456	.372	.501	R^2	.424	.316	.476	R^2	.556	.479	.588
MSE	4.6	4.8	5.9	MSE	6.4	6.7	7.9	MSE	6.5	6.6	8.2
Cp	17.3	10.9	36.0	Cp	17.7	11.7	35.0	Cp	17.1	8.1	35.0
F Ratio	.299	---	---	F Ratio	.283	---	---	F Ratio	.241	---	---

*Number and identity of variables selected for equations with the lowest values of C_p.

ence but has a positive and rather high standardized beta. With all other factors held constant, having high proportions of houses with adequate plumbing in 1950 was associated with poorer rather than better survival of infants at the postneonatal ages. This is a rather surprising finding and suggests that the meaning of this variable changed over the 20-year span. By 1970, having adequate plumbing seems to be very important to survival.

A PE factor, COTN, which is an indicator of the extent of pesticide usage, enters second in 1950. On the basis of the size of its beta value, it can be judged the single most important variable in the equation. COTN also enters the 1960 and 1970 equations but in much less prestigeous positions. It would not have been included in the minimum C_p equations for these later years. The action of this variable in 1970 is interesting to note. It comes in simultaneously with two dummy-variables, cotton-trend typologies--TC1 (counties with continued high proportions of acreage in cotton over the 24 year period) and TC2 (counties producing continued average acreages of cotton over the period) but exhibits a very high negative beta, indicating that within each class of counties the greater the number of acres in cotton, the lower the postneonatal loss rate for whites. Thus the contribution of this variable went from strong positive strong negative association. Why? Whether this change may be the result of a change in the type or amount of pesticide used and needs to be investigated.

VTL, a PB variable measuring maternal vitality by the death rate of the parental generation ten years earlier, is the second variable to enter the 1970 equation. Its beta is negative and of moderate size. It would probably not have been able to capture this prestegious location in the equation if the postneonatal mortality rate had not been relatively low. Its negative sign indicates that infants surviving past one month of age are an improved risk group. VTL also enters the equations in 1960, where it has the sixth salience rank and a relatively low positive beta value, indicating a carry-over of adverse effects from low levels of maternal vitality into the postneonatal ages. Thus there is again a curious reversal of sign in an important variable. Explanation can only be tentative and indeed the meaning of the variable is open to question. Given the minimum controls used for migration, VTL may well be measuring a characteristic, endemic in an area rather than an inherent quality of the parent population.

Other 1950 Variables

The third and fourth variables to enter the 1950 equations are an SB and another PE variable. WAGE shows that the higher the average wage the lower the county loss rate. WAGE also enters the 1960 Selected equation in position 9; however, its coefficient signs are positive indicating that it was not associated with better infant survival in 1960. In 1970, it does not enter the equations. The changing nature of association for this variable is also curious. Money apparently isn't everything. A rural population changing its economic base from agriculture to industry suffers adjustment problems at the same time that it is enjoying more money income.

RAIN, a PE variable, enters fourth in 1950. Like COTN, it is positive. It does not enter the 1970 equation, but it has fifth place in 1960 and its coefficients are positive. Remembering back to the geographic locations identified for counties experiencing rate peakings in loss rates, one wonders about the possible place excess moisture may have in the etiology of infant death, especially during years when housing was not as adequate as it is today.

The only other variable indicated for lifting-up out of the 1950 equation is ILLG. Used only in 1950, ILLG that the higher a county's illegitimacy rate, the higher its postneonatal loss rate. Since illegitimacy rates have not declined, it is reasonable to assume that the variable's lack of importance in the two later years is the result of social changes that have improved the survival chances of illegitimate postneonatal infants.

Other 1970 Variables

The third and fourth variables selected in 1970--high birth rates (SS) and high proportions of midwife deliveries (HC)--were both associated with poor infant survival. The latter variable is taken as an indicator of the availability and use of health care services rather than of problems connected with child birth. Thus was the only year in which these two variables were selected for inclusion in the explanatory equations, possibly because lower loss rates indicate greater control of mortality and the identification of otherwise concealed factors.

Two DL variables, DNS (population density) and MFG (manufacturing) come in together filling position five and six in the 1970 models. Neither of these variables are in the 1960 equations but both are in the 1950 Selected model and with the same signs. However at this earlier date, DNS is indicated as having a high degree of colinearity with TAGS. Simultaneous entry and very high beta values of opposite sign identify this colinearity. They must be looked at as a unit and the algebraic sum of their two betas, measures their combined effect.

The last three variables to be looked at in the 1970 model are UNMP (percent unemployed) and BLK (percent of the population black) which come in as a block, and TT2, a category in the neonatal mortality trend typology. When these contributions are compared with 1960 and 1950, inconsistencies are again noted. The TT2 reversal might have resulted from the fact that the trend typology in 1950 identified counties by a trend that had not yet materialized. The failure of BLK to make a contribution in the earlier years might indicate that the situation of blacks was too stagnant and unvarying in earlier years to differentiate counties in terms of the mortality variations of white infants. The negative signs for UNMP in 1960 and 1950 are more perplexing, however. Why would higher levels of unemployment be associated with better infant survival in these years?

1960 Equations

Specific focus on the 1960 equations has been left until last, although some of the variables in these equations have been looked at in terms of how their use compared with use in 1950 and 1970.

The 1960 Selected equation makes the poorest fit with the hypothesized model. An SS variable does not come in until after SB, DL, PE and PB variables have all made entries. The impression is that this is a population which is in process of social change and in which there is a great deal of differentiation in access to factors necessary for a high living standard. Five, and possibly six, variables carry signs opposite to what might have been expected (SALES, UNMP, WAGE, VALU, TAGS, and maybe VTL).

The most important variable identified by both equations in 1960 was PHYS. Entering with PHYS in 1960 is SALES, also a SB variable but with a positive beta value. It also showed up in the Selected models for the other two years, having a negative sign in 1950 and a positive one in 1970. Thus there is another sign reversal and again it seems reasonable to attribute the inconsistency to social change and to question whether modernization does not bring mixed blessings.

The variables entering together and taking places 3 and 4 are DL class dummy variables which are classing counties on the basis of their neonatal mortality trend. Essentially these typologies are saying that neonatal survival trends are associated with the level of postneonatal loss.

The two remaining variables, which we earmarked for special attention are RAIN(PE) and VTL(PB), have already been discussed in connection with the equations for the other years. Of the six 1960 variables discussed, none is an SS variable, although two are in the SB class.

Summary and Conclusion

In conclusion, what can be said about the match between the hypothesized model and the empiric equations which test it; about the relative contributions of the social, environmental and health care variables; about the stability of the statistical associations, and about the nature of the sub-societies which these analyses are describing?

First, the best matches between the hypothesized model and the empirical equations was obtained in 1970 and 1950; in 1960 the fit was very poor. Inasmuch as the model assumes a modernized population it is logical that 1970 should have provided a good fit.

The 1950 equations, while providing a reasonably good fit with the hypothisized model, seems to be describing a stable rather than a modern population. The SS variables which prove useful are those which indicate a rural and conservative population. That the worst fit occurred in 1960 rather than 1950 seems to be explainable by the situation of rapid social change in progress in the society at that time. That different sets of variables were selected in the different years and that those that were selected repeatedly had different relative weights and saliences and sometimes different signs is really not surprising when one reflects on the changing nature of society and realizes that (1) social disorganization may accompany change, and (2) the meaning of the variables themselves may change. Furthermore, over time counties may become more similar on some characteristics and more differentiated on others.

While modernization and economic development are essential components in achieving the levels of living which favor low loss rates, all of the factors associated with this process are not in themselves automatically favorable to infant survival. There is in fact a strong suggestion that the effects of development are to some extent curvelinear--that is, initially favorable, but generating adverse as the process gets under way and disrupts and differentiates the subareas of the society. The 1960 equations which rely so heavily on DL factors particularly support this conclusion.

Second, the social variables, classed either as SS or SB, seem to be consistently most salient in explaining variations in postneonatal mortality loss. While they admittedly have a technological basis, these social factors undoubtedly mediate the effects of biological and physical factors.

Third, environmental contaminants did override many of the social factors and had a significant impact on the explanation of infant mortality of these white population sub-samples. However, the impact seems to have decreased over time--possibly as the levels of living have risen and the control over contaminants has improved.

Fourth, associations with more remote variables became detectable as general mortality levels declined, and this usually happens as levels of living rise and contagious diseases come under control.

Fifth, while it was not noted in the discussion, some variables which one would have expected to show major significance were relatively low in salience. For instance, SES (socioeconomic status measured by an index of educational and occupational achievement) was rather tardy in entry in 1950 and 1970 and missing in 1960. Apparently, specific factors which impact more directly on the life situation of the infant are more important than general socioeconomic status. Improvements in the survival of infants can probably be more quickly achieved by direct focus on specific problems than by waiting for trickle-down effects from the achievement of better-class life styles.

Lastly, while the findings given above are complex, and somewhat contradictory, this is probably because they are a relatively accurate depiction of reality. More studies should use multidisciplinary variables and test their theoretical models with several sets of data.

REFERENCES

Bryant, Ellen S.

1976 Infant Mortality in Mississippi Counties, 1949 Through 1972. Ph.D. Dissertation, Department of Sociology, Mississippi State University.

Chase, Helen C., Ed.

1973a A Study of Risks, Medical Care, and Infant Mortality: Highlights of the Report. American Journal of Public Health 63:1-2.

1973b A Study of Risks, Medical Care, and Infant Mortaity: Part 1, Selected Substantive Results. Amercan Journal of Public Health 63:3-16.

1972 The Position of the United States in International Comparisons of Health Status. American Journal of Public Health 62:581-589.

Curran, Elizabeth W.
1966 Report of the International Conference on the Perinatal and Infant Mortality Problem of the United States. Vital and Health Statistics, Series 4, Number 3 (June). Washington, D.C.: National Center for Health Statistics.

Cuthbert, Daniel and F. S. Wood
1971 Fitting Equations to Data. New York: Wiley and Sons.

Hocking, R. R. and R. N. Leslie
1967 Selection of the Best Subset in Regression Analysis. Technometrics 9:531-540.

Hocking, R. R., R. M. Speed, and O. P. Hackney
1976 Application of Biased Estimation Techniques (Unpublished paper presented at the Joint Statistical Meetings of the American Statistical Association and Biomedical Society, Texas A&M University, March 8-10, 1976).

Pressat, Roland
1961 Demographic Analysis. New York: Aldine-Atherton.

Shapiro, Sam
1968 Infant Perinatal, Maternal and Childhood Mortality in the U. S. Harvard: Harvard University Press.

Stockwell, Edward G.
1962 Infant Mortality and Socioeconomic Status: A Changing Relationship. Milbank Memorial Fund Quarterly 40:101-119.

Wright, Nicholas H.
"Some Estimates of the Potential Reduction in U.S. Infant Mortality Rate by Family Planning," American Journal of Public Health, 62(8) 1972, pp. 1130-1134.

Appendix

CHART 1.-Independent Variables Used in Analyzing Postneonatal Mortality in Mississippi Counties, 1949-1972

Principal Component and Variable Name	Operational Definition
Social Situation	
Illegitimacy[1,2] (ILLG)	Percent of births classed as illegitimate
Child-Woman Ratio[2] (CHLD)	Number of children under five per 1000 women aged 15-44 years
Birth Rate[2] (BRRT)	Crude birth rate
Adequate Housing[2] (PLMB)	Percent of housing units with basic water and sewer facilities[3]
Employment of Females[2] and/or Mothers[2] (FEMP or MEMP)	Percent employed of females aged 14 years and over in 1950 and 1960; percent employed of married females aged 16 and over, husband present and own children under six years of age, 1970
Socioeconomic Status[2] (SES)	Index computed from percent distributions of occupation and educational achievement. See Bryant, op. cit.
Equality (EQAL)	Ratio of percent black males in professional occupations to percent white males in professional occupations
Unemployment[2] (UNMP)	Percent of labor force unemployed
Health Care[4]	
Type of Obstetric Care[1,2] (MDWF; HOSP)	Percent of births delivered by midwives; percent of births delivered in hospitals. These two variables are near but not absolute reciprocals of each other; not included is the residual group born outside hospitals but attended by physicians
Physical Environment	
Pesticide Use[1] (COTN)	Number of acres of cotton harvested per square mile of county area
Rainfall[1] (RAIN)	Number of inches of rain recorded per year
Farm Acreage (FARM)	Percent of county acreage in farms
Social Background	
Total Sales[1] (SALES)	Estimated sales taken from sales tax reports; standardized by population size for census and mid-census years
Employment[1] (JOBS)	Average monthly number of jobs under covered employment; standardized by population size for census and mid-census years; from Mississippi Employment Security Commission
Income[1] (WAGE)	Aggregate salaries earned under covered employment divided by average monthly number of jobs
Physicians Per Capita (PHYS)	Number of physicians in the county standardized by population size
Percent Nonwhite (BLK)	Percent of county population classed as nonwhite
Race (RACE)	A dummy variable coded 1 for nonwhite data and 0 for white data
Developmental Level	
Percent Urban (URB)	Percent of a county's population classed as urban
Number of Large Manufacturing Establishments (MFG)	Number of establishments employing 20 or more persons; average taken of number reported by Manufacturing Censuses of 1945 and 1954; 1957 and 1963; and 1967 and 1972; not standardized for population size
Per Capita Value Added by Manufacturing (VALU)	Averaged from two Manufacturing Censuses as for MFG
Percent Change in Population Size[2] (GROW)	Percent change in population size since previous census
Population Density (DNS)	Number of persons per square mile
Transportation[1] (TAGS or TAGP)	Number of car tags issued per square mile of county territory; for decade centered analyses a second variable was created by standardizing by population size

CHART 1.-(continued)

Variable Type and Name	Operational Definition
Cotton Acreage Trend Typology (TC)	Based on the 24 year trend in proportion of county area devoted to cultivation of cotton this typology has four types: TC1 consists of counties producing at least 10 acres of cotton per square mile for the total 24 year period or falling below this level only briefly; TC2 consists of counties producing between 2 and 10 acres annually throughout the period; TC3 includes counties producing between 2 and 10 acres at the beginning of the period but falling below this amount by its end; and TC0 is the residual class which would include mostly the non-cotton growing counties
Neonatal Mortality Trend Typology[2] (TR)	Based on the 24 year trends observed in the scattergrams this typology has three types: TR1 (improving counties) includes counties which had a correlation coefficient between year and rate of -.2 or larger; TR2 (worsening counties) includes those which had coefficients of +.2 or larger; and TR0 is the residual group which consists of those having coefficients falling between these two values (no change counties)
Neonatal Mortality Trend Typology (TT)	This typology is derived from the TR typology and combines the trends by race into a typology for the total county population; consisting of four types, TT1 includes counties having TR1's for both races or a TR0 for one race; TT2 includes counties having TR2's for both races or a TR0 for one race; TT3 combines counties having TR1 for one race and TR2 for the other; TT0, the residual group, consists of counties having TR0's for both races; the ordering from 1 to 3 is best, worst, contradictory, and no change
Prenatal Background	
Maternal Vitality[2] (VTL)	County mortality rates ten years earlier for the population aged 15-35 years during the time period being analyzed
Low Birth Weight[2] (LBWT)	Percent of infants having low weight at birth (less and 5½ pounds); available only for 1965 and 1970 analyses

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[1] Data are from annual time series and use is not confined to years in which censuses were taken.

[2] Data are race specific.

[3] Methods of measurement vary somewhat for each decade. See Bryant 1976, p. 141.

[4] This variable type may actually be measuring residual effects of the birth experience. Poor obstetric care may place an infant in a high risk group. However such infants usually do not survive past the first month of life and the assumption is that infants delivered by midwives will tend to live in a social situation where medical attention is at a minimum.

HEALTH HISTORICAL FINDING AMONG LOW INCOME BLACK FAMILIES[1]

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INTRODUCTION

Mississippi provided the crisis circumstance that has made hunger and malnutrition a current national concern (1-5). To clarify this situation among low income, black families in Mississippi, a nutrition survey was conducted in Claiborne County located in Southwest Mississippi. The study was conducted in three different areas: (1) demographic data and food practices including food frequency for 1,000 households; (2) dietary intake of individuals for 250 households; and (3) nutritional evaluation by health history, clinical examination, biochemical determination, and anthropometric measurements for 400 persons aged 0-80 in this county. This paper deals with the findings of health history.

METHODS

The total population of Claiborne County, according to 1970 Census, was 10,086. Seventy-five percent of this population was Black. Approximately 200 households were randomly selected in the black residential area for the study. A total of 400 persons aged 0-80 from 200 households were brought to the campus for an interview and examination. This paper deals only with the data of the 304 persons aged over 5.

The study was conducted May through August in 1976. Interviewers included junior and senior students majoring in Food/Nutrition and General Home Economics at Alcorn State University. All interviewers were given instruction by the school physician pertaining to the conditions and status of selected diseases and infections. Interviews were conducted on the campus when interviewees were brought there for the clinical examination. For young children, the informant was the person responsible for the child's caring, usually the mother, father, or grandparent. For subjects aged 6 through 12 usually both the parents and the child were interviewed.

The medical history form used was similar to the one used in the Ten-State Nutrition Survey (6) for children and adults. However, it was modified to adjust for local conditions. The questionnaire for children over age 5 and adults considered in this report included disease patterns such as infection, chronic illness and conditions for which major operations were performed or hospitalization was necessary.

A total of 304 persons aged 5 and over were interviewed regarding their health history and given a physical examination. This sample made it possible to present five age groups. These groups included ages 6-11, 12-17, 18-34, 35-60, and over 60 years. All age groups except the children aged 6-11, were subdivided according to sex. The groups of males aged 35-60 and over 60 had the smallest sample size of 8, and that of males aged 12-17 had the largest sample size of 65. The sample size of each group is presented in Table 1. Most of the data was indicated as a percent of the total sample in each age group.

RESULTS AND DISCUSSION

The percentages of historical findings for anemia, abnormal bleeding, asthma, hay fever, other allergy, tuberculosis, chronic respiratory disease, goiter, and rheumatic fever are presented in Table 1 by sex and age. Anemia is generally recognized as the greatest nutritional problem among the low income families over the world. This is true for this population. Anemia was prevalent in all age categories. However, prevalence of anemia was significantly correlated to age and sex. Anemia was prevalent more in females than in males, and more in the old than in the young. For females, 16.94 percent of the persons aged 18-34 had been treated or hospitalized for anemia; 24.31 percent for the age group 35-60; and 24.07 percent for the age group over 60. For males, a history of anemia was reported only in the two age groups 12-17 and over 60 years with 3.07 and 12.5 percent, respectively. This correlation to sex is supported by the findings in dietary intake (7) and clinical and biochemical determination of this population (8). The highest rate of abnormal bleeding was reported for females aged over 60. Post-menopausal bleeding may account for this. No history of abnormal bleeding was reported in males except in the age group 18-34 years. In children less than 2 percent reported bleeding.

For the study asthma included both bronchial and cardiac conditions. Asthma was highly prevalent in the children aged under 12 years and in females aged over 34 years. The prevalence of hay fever showed a significant age difference. A small percent of hay fever was reported for the children aged 6-11. The adolescents aged 12-17 of both sexes, and males aged 18-34 had no history of hay fever. However, in older age groups 12-25 percent of the persons reported to have a history of hay fever. Although males aged 18-34 had no history of hay fever, they had the highest rate of other allergic conditions with 16.6 percent. It was certain that hay fever and/or other allergic conditions were less prevalent in children aged 6-17 years than in adults.

Table 1: Percentage of historical findings for selected disease by age and sex.

Age	Sex	Anemia	Abnormal Bleeding	Asthma	Hay Fever	Other Allergy	Tuber-culosis	Chronic Respiratory Disease	Goiter	Rheumatic Fever
		Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
*6-11	(56)[a]	1.78	1.78	10.71	3.59	7.14	0.00	0.00	0.00	0.00
12-17	F (46)	6.52	4.34	4.34	0.00	2.17	0.00	0.00	0.00	0.00
12-17	M (65)	3.07	0.00	3.06	0.00	4.60	0.00	3.07	0.00	3.07
18-34	F (60)	16.94	5.04	3.38	14.24	11.85	0.00	3.38	3.38	3.38
18-34	M (12)	0.00	8.33	0.00	0.00	16.66	0.00	0.00	0.00	0.00
35-60	F (36)	24.31	8.10	13.51	13.51	5.40	0.00	2.70	27.01	2.70
35-60	M (8)	0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00
Over 60	F (13)	24.07	24.07	15.38	15.38	15.38	0.00	0.00	15.38	0.00
Over 60	M (8)	12.50	0.00	0.00	12.50	12.50	0.00	0.00	0.00	0.00
Children, Mean		1.78	1.78	10.71	3.59	7.14	0.00	0.00	0.00	0.00
Female, Mean		17.96	10.39	9.15	10.78	8.70	0.00	1.52	11.44	1.52
Male, Mean		3.89	2.08	0.77	9.38	8.44	0.00	0.77	0.00	0.77

[a] Sample Size

*The children include the age group of 6-11 years.

Tuberculosis in the United States has diminished greatly since the beginning of the century (9). Tremendous advances in prevention, detection, and treatment through drugs, surgery, and other means have tended to give the public the impression that tuberculosis is no longer a common health threat. Fortunately this is the case in this community. No one reported a history of tuberculosis.

Goiter was found to be a problem with only females beyond 17 years of age. This finding strongly supports the importance of iodine for females, especially during their reproductive period. None of the children and none of the males reported a history of goiter. The highest rate of goiter was reported among females aged 35-60, with over 27 percent. Rheumatic fever was not a common disease. It was reported in three groups: 12-17 years of the male; 18-34 years of the female; and 35-60 years of the female; around 3 percent in three groups, respectively.

Percentage of historical findings for diabetes, hypertension, heart disease, obesity, arthritis or rheumatism, fractures, malignancy, major operations and work disability are presented in Table 2. None of the children or males had been treated or hospitalized for diabetes. However, diabetes was prevalent in the older female population: 53.84 percent reported for diabetic treatment or hospitalization in the ages over 60; 13.51 percent in the ages 35-60; and 5.07 percent in the ages 18-34. Hyperglycemia based on fasting serum glucose level indicated a similar trend of age and sex. The data also indicated that the effects of age on increasing glucose level appeared to be greater in females than in males.

Hypertension was the most serious health problem in persons over age 34, especially females. The percentage of hypertension was 10.16 percent in the ages 18-34; 56.74 percent in the ages 35-60; and 92.3 percent in the ages over 60. For males no one had been treated in the age group 18-34 years. However, 37.50 percent for the ages 35-60 and 12.50 percent for the ages over 60 had been treated or hospitalized for hypertension. The blood pressure data indicated that both systolic and diastolic pressures significantly increased with age, and it was highest in the age group of 35-60 for females and in the age of over 60 for males. The mean blood pressure in these groups was much higher than the normal level, showing hypertension of 149.0/92.2 and 149.0/94.0 for females and males, respectively. In the Health and Nutrition Examination Survey, it was reported that proportionately more Blacks than Whites and more people in South than North had hypertension (10). The high prevalence of hypertension in this survey may be partially explained by the findings of the HANES.

The prevalence of obesity showed age and sex differences; more obesity in the old than the young and more obesity in females than males. The highest rate of treatment or hospitalization for obesity was found to be in females aged over 60, showing 15.38 percent. However, the rate of obesity determined by triceps skinfold thickness was 61.54 percent. According to triceps skinfold criteria, obesity was one of the major health problems in this population.

Table 2: Percentage of historical findings for selected disease by age and sex.

Age	Sex	Diabetes	Hyper-tension	Heart Disease	Obesity	Arthristic or Rheumatism	Fractures	Malig-nancy	Major Operation	Disability of Work
		Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
*6-11		0.00	0.00	0.00	1.78	1.78	0.00	0.00	5.36	0.00
12-17	F	0.00	0.00	0.00	0.00	0.00	4.34	0.00	8.69	0.00
12-17	M	0.00	0.00	3.07	0.00	4.60	0.00	3.07	0.00	0.00
18-34	F	5.07	10.16	3.38	5.07	0.00	5.07	0.00	15.25	0.00
18-34	M	0.00	0.00	0.00	0.00	0.00	33.33	0.00	25.00	0.00
35-60	F	13.51	56.74	2.70	10.80	20.61	8.10	5.40	43.24	5.40
35-60	M	0.00	37.50	0.00	0.00	25.00	50.00	0.00	50.00	25.00
Over 60	F	53.84	92.30	30.76	15.38	84.61	15.38	0.00	38.46	0.00
Over 60	M	0.00	12.50	0.00	12.50	50.00	12.50	0.00	37.50	0.00
Children, Mean		0.00	0.00	0.00	1.78	1.78	0.00	0.00	5.36	0.00
Female, Mean		1.52	39.80	8.54	7.81	26.31	8.22	1.35	26.41	1.35
Male, Mean		0.77	12.50	0.77	3.13	19.90	23.96	0.77	28.13	6.25

*The Children include the age group of 6-11 years.

Coronary heart disease (CHD) is a major cause of death in the United States and it is affected by age and sex (11, 12). The present study showed the age and sex difference in the history of CHD: CHD was found more in females than in males and more in the old than in the young. The highest treatment or hospitalization for CHD was in females aged over 60 with 30.76 percent. Several investigators showed that myocardial infarctin was more likely to be fatal in males than in females among Whites, but sex difference did not exist among Blacks even before menopause. The higher prevalence of CHD in females than in males in the present study may be partially explained by racial difference and by the higher prevalence of other clinical conditions such as diabetes, obesity, hypertension as well as hypercholesterolemia in females than in males.

Arthritis or rheumatism was one of the major health problems in both males and females beyond age 34. The highest rate of arthritis or rheumatism was reported in females aged over 60. It was 84.60 percent. There was not much problem with arthritis or rheumatism in persons under 35 years of age. Fractures were likely to be more in males than in females and to be more in the old than in the young.

None of the children aged 12-17 reported having had a major operation. However, 5.36 percent of the children aged 6-11, and 8.69 percent of the female adolescents aged 12-17 had had at least one major operation. From 18 through 60 years of age males were substantially more likely than females to have undergone surgical procedures. Beyond age 60, this sex difference disappeared. However, the proportion of the old who had had a major operation was relatively high in both sexes. Work disability was reported only in one age group of 35-60 years, with 5.4 percent in females and 25.0 percent in males. None of other groups reported for work disability.

Percentages of historical findings for epilepsy, mental illness, hemorrhoids, hernia, peptic ulcer, gall bladder disease, liver disease, prostate disease, kidney stone, kidney or bladder infection are presented in Table 3. A history of epilepsy was reported only in females ages 18-34 and 35-60, with 3.38 percent and 5.40 percent, respectively. None of the children or males had a history of epilepsy. A history of mental illness was reported only in one age group 35-60 years of females.

Hemorrhoids are probably the most common condition affecting the gastrointestinal tract. There was no consistent trend with respect to age and sex for having a history of hemorrhoids. In general, a higher prevalence of hemorrhoids existed among adults than among children. However, aging had no consistent effects requiring treatment or hospitalization for hemorrhoids in this study. The highest rate of hemorrhoids was found in males aged 18-60. A history of hernia was reported only in males aged 35-60. Peptic ulcer here included both gastric and duodenal ulcer. No history of peptic ulcer was reported up to the age of 34. However, beyond age 34, peptic ulcer appeared in both sexes. Peptic ulcer was more prevalent in males in than in females. The patterns of peptic ulcer in the present study well agree with the general patterns in that it is more prevalent in males than in females, and more prevalent in the old than in the young. Gall bladder disease was reported in two age groups of females: 5.07 percent for the age group 18-34 and 7.69 percent in females and 12.50 percent in males.

Table 3: Percentage of historical findings for selected disease by age and sex.

Age	Sex	Epilepsy	Mental Illness	Hemorrhoids	Hernia	Peptic Ulcer	Gall Bladder Disease	Liver Disease	Prostate Disease	Kidney Stone	Kidney or Bladder Infection
		Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
*6-11		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12-17	F	0.00	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	6.54
12-17	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.60
18-34	F	3.38	0.00	6.77	0.00	0.00	5.07	0.00	0.00	5.07	15.24
18-34	M	0.00	0.00	16.66	0.00	0.00	0.00	0.00	17.66	0.00	0.00
35-60	F	5.40	5.40	16.21	0.00	2.70	0.00	0.00	0.00	0.00	8.10
35-60	M	0.00	0.00	0.00	12.50	12.50	0.00	0.00	5.40	0.00	0.00
Over 60	F	0.00	0.00	7.69	0.00	15.38	7.69	7.69	0.00	0.00	30.76
Over 60	M	0.00	0.00	12.50	0.00	25.00	0.00	12.50	0.00	0.00	37.50
Children, Mean		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Female, Mean		2.20	1.35	9.36	0.00	4.52	3.87	1.92	1.35	1.27	15.15
Male, Mean		0.00	0.00	7.29	3.13	9.38	0.00	3.13	4.42	0.00	10.53

*The children include the age group of 6-11 years.

The prostate gland is an accessory of the male sex glands and of structures intimately associated with the urinary tract. Prostatitis, an infection of the prostate gland is quite common. Prostatitis in younger men is more likely to be specific. Prostate diseases which needed treatment or hospitalization were highest in young adults aged 18-34 with 17.66 percent. In the age group of 35-60, 5.40 percent reported this disease. A history of kidney stone was reported in 5.07 percent of the young female adults. Kidney and bladder infections were significantly higher among the old. It was the highest in the age group over 60 in both males and females.

Most of the diseases were prevalent in females than in males, especially beyond age 34. Those diseases are anemia, abnormal bleeding, chronic respiratory disease, goiter, diabetes, hypertension, heart disease, obesity, and arthritis or rheumatism. The high prevalence of disease in females aged over 34 correlated well with the clinical conditions found by biochemical and anthropometric measurements. A small percentage or none of the children had been treated or hospitalized for any disease except asthma. Asthma was most prevalent in children. Fractures, major operations, work disability, peptic ulcer, liver, and prostate diseases were found more in males than in females.

The major health problems are anemia, abnormal bleeding, allergy, diabetes, hypertension, obesity, and arthritis. Among these, hypertension was the most serious problem beyond age 34 years in both sexes. A relatively high percent of the population has had a major operation. All diseases were highly prevalent in the old and were found more in females than in males.

SUMMARY

The total population of Claiborne County, according to 1970 Census, was 10,086. Seventy-five percent of this population was Black. Approximately 200 households were randomly selected in the black residential area. A total of 304 persons aged over 5 were interviewed with respect to their health history and given a medical examination. Disease patterns showed a sex and age difference. Most of the diseases were more prevalent in females than in males, especially beyond the age 34 years. Such diseases are anemia, abnormal bleeding, hypertension, heart disease, obesity, and arthritis. However, some diseases were more likely in males. Those included fractures, major operation, work disability, peptic ulcer, liver and prostate diseases. Asthma was the disease highest among children. A small percentage or none of the children had been treated or hospitalized for other diseases.

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REFERENCES

(1) Hunger. U. S. A. Citizen Board of Inquiry into Hunger and Malnutrition in the United States. Washington, D.C., 1968.

(2) Briggs, G.M. Editorial: "Hunger and Malnutrition" J. Nutrition Education: 1:4. Winter 1970.

(3) Shuck, C., and Tartt, J.: Food Consumption of Low Income Rural Negro Households in Mississippi. Journal of American Dietetic Association 62:51, 1973.

(4) Owen, G.M. and Kram, R.N.: Nutritional Status of Preschool Children in Mississippi. Food Sources of Nutrients in the Diets. Journal of American Dietetic Association 54:490, 1969.

(5) Owen, G.M., Garry, P.J., Kram, K.M., Nelson, C.E., and Montalvo, J. M.: Nutritional Status of Mississippi Preschool Children. A Pilot Study. American Journal of Clinical Nutrition 22:1444, 1969.

(6) Center for Disease Control: "Ten -State Nutrition Survey in the United States", 1968-1970. I - Historical Development, II - Demographic Data, DHEW Publication No. (HSM) 72-8130; III - Clinical, Anthropometry, Dental DHEW Publication No. (HSM) 72-8131; IV - Biochemical, DHEW Publication No. (HSM) 72-8132; V - Dietary, DHEW Publication No. (HSM) 72-8133; Highlights, DHEW Publication No. (HSM) 72-8134, Atlanta, Ga., Health Services and Mental Health Administration, 1972.

(7) Koh, E. T. and Caples, V. Nutrition Survey of Black Families in Claiborne County of Southwest Mississippi: I. Food Practices and Dietary Intakes, 1973-1974. Research Bullentin No. 5 Department of Home Economics, Alcorn State Universtiy, Lorman, Mississippi, 1977.

(8) Koh, E. T. Nutrition Survey of Black Families in Claiborne County of Southwest Mississippi: II. Health History, Clinical, and Biochemical Evaluation. Research Bullentin No. 6. Department of Home Economics, Alcorn State University, Lorman, Mississippi, 1978 (in press).

(9) Donald, G. Cooley. Family Medical Guide. Meredith Corporation, New York: 1976, p. 216.

(10) National Center for Health Statistics: Advanced Data; Hypertension; United States, 1974. Vital and Health Statistics U. S. DHEW, PHS, HRA 77-1250 No. 1. Rockville, Maryland 1976.

ANOMIA, ROLE STRAIN, AND THE FEMALE FAMILY HEAD

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Female-headed families represent a growing proportion of the total number of families in our country today. Single female heads represent a relatively large societal grouping to which generalizations are often applied and about whom much is assumed, often without the basis of empirical research. For many reasons, these women are levelled and diminished into a subgroup viewed as deviant and problematic (Glasser and Navarre, 1965). Many studies have given attention to the dilemmas and conflicts experienced by women who must assume the economic and social responsibilities of the absent male and at the same time continue to fulfill the traditional role expectations associated with womanhood. However, relatively few research attempts have been made to study the social psychological affects of assuming the role of family head for women.

The problem to be dealt with in this investigation is to identify specific characteristics and attributes of the female family head role that act as antecedents of anomia, an important manifestation of psychological distress. That is, what aspects of the role of being a family head separate a woman from society and perpetuate self-to-other distance and alienation (Srole, 1956). We review the concepts of role, role strain, and anomia and identify a series of household and personal characteristics that may increase a woman's ability to cope with role strain, or her vulnerability to its consequences. Finally, we examine the relationship between anomia and selected household and personal characteristics in a sample of female heads of families, and in nonwhite and white subgroups of that sample. The results of this investigation may contribute to the limited literature and research on the female family head in general and on the southern rural female family head in specific.

Role strain and anomia

In trying to fulfill all the roles that are necessary for the proper functioning of the family and household, the single female head of family may begin to experience what has been called role strain or role overload (Goode, 1960). This strain may occur when motherhood, provider, and disciplinary roles are overlaid and diffused. She may feel that some aspects of each role are being neglected or are in conflict. Thus these women begin to have feelings of helplessness and alienation. The fact that she has become the head of a family places the female in a deviant role because, in our society, that role is one generally ascribed to males. Furthermore, Goode (1960:488) stated that in deciding which role is the more important, the individual seeks to minimize the felt strain and role cost.

Some researchers have identified important consequences of chronic role strain. One social-psychological consequence of role strain is manifested in the deterioration of an individual's relationship with and feelings toward the larger society in which she is a part. This manifestation of role strain and other forms of malfunctions in role performance is anomia.

Leo Srole, who designed the Srole Anomia Scale, designated the term anomia to refer specifically to the social-psychological dimension of anomie. His usage referred to the individual eunomia-anomia continuum representing "the individual's generalized pervasive sense of self-to-other belongingness at one extreme compared with self-to-other distance and self-to-other alienation at the other pole of the continuum" (Srole, 1956:709-716).

Women who have found themselves to be heads of family often undergo a period of readjustment unless they have never been married. This is especially so in cases of divorce (or separation) and death. Pearlin and Johnson (1977:704) discovered that at present there are studies showing with rare consistency that people with spouses are more likely to enjoy psychological well-being than those without. Bachrach (1975:6-7), in an extensive review of literature pertaining to those formerly married, found that the transition from marriage to singleness is a stressor event entailing a variety of psychic traumas. Hunt (1966) suggested that the formerly married have the difficult task of accommodating to new role definitions that are ambiguous relative to those that give meaning and direction to their behavior in married life.

Another important argument attributes the psychological distress of the formerly married to the powerful norms defining marriage as the most desirable state to be attained by an adult. An individual whose marital status changes from married to unmarried may be viewed as being outside the normative pattern of life and are seen as deviant and unfit. More often it is a perception they attribute to others. The self concept is often damaged as a result of feelings of failure to conform to the norms of the society (Lee, 1974; Udry, 1974). The individual is thus stigmatized and labelled, which has a negative effect on all concerned, but for the female head especially. These women often incorporate society's attitudes, insecure feelings, and guilt regarding their situation (Brandwein, et. al., 1974:499).

Female family heads are expected to perform adequately in a society that is geared toward two partners. They frequently suffer a lack of self-confidence which affects the ability to adequately perform in the new role(s) thrust upon them. It also prevents them from developing new interpersonal relationships (Welsh, 1973:167). Guilt is felt because less time is spent in the mother-homemaker role and more time is used in the breadwinner role. Society regards these women as abnormal and often they themselves accept this label. Thus anomia is a particularly important phenomenon among female heads of family.

Sources of role strain and anomia

This study considers nine factors considered to be conditions directly contributing to chronic role strain, and consequently, anomia for female family heads. These factors are race, education, income, number of different residences, number of years at current residence, distance moved, number of job types, level of living and leisure participation. A brief discussion of each of these factors follows.

Race

McClosky and Schaar (1965:19) stated in relation to race and anomia that Negroes have been uniformly reported to be more anomic than whites. Lenski and Leggett (1960) found that race produced a strong tendency to agree with the Srole "anomia" items. Alleger (1966:7), however, stated that the anomia of the Negro apparently stems not from race per se but from the social environment which conditions his mental responses.

Education

Simpson and Miller (1963:260) found in their study of male respondents that the lower the educational attainment, the higher the anomia. Many studies on anomia have examined education directly, as well as using it as a control variable.

Income

The findings of Mizruchi (1960:648) suggest that income alone does not determine whether or not persons become anomic, but that expectations regarding income—the principal means of achieving success play a significant role in the process. Persons who have attended college have greater income expectations, and when the latter are not realized a greater tendency to anomia results.

Number of different residences

Regarding residential mobility, Weissman and Paykel (1972), who studied a group of depressed women, noted that these women often directly related their condition to moving which in turn created such problems as increased loneliness, career frustrations, financial problems and identity confusion. This is quite disruptive of the home environment causing increased feelings of frustration and anxiety because there is no household stability.

Number of years at current residence

Although research studies have not focused specifically on this variable, the conclusions of the study by Weissman and Paykel (1972) indicated that remaining at the same residence for an extended time period has a positive effect on the psychological adjustment of women. This may be attributed to the fact that stability represents an opportunity to settle and organize household and family routines.

Distance moved

Although residential mobility affects the psychological state of a woman negatively, whether she has moved a short distance (e.g., to the other side of town) or longer distances (e.g., outside the state) could have some effect on the degree of stress experienced by these women. Proximity could affect anomia less than long distance for a variety of reasons which include the maintenance of social contacts and a social routine that has been satisfying.

Number of job types

Occupation was found by McClosky and Schaar (1965) to correlate negatively with anomia. Those women who were able to work at regular times, or to hold one position for an extended period of time were better able to provide for the necessities of life. Being able to meet their basic needs contributes to an increase in the self-concept and reduction of other negative psychological conditions such as depression and neurosis.

Level of living

Studies by Nix (1962), Terry and Bertrand (1966), and Moon and McCann (1966) reported that having access to the items on the material level of living scale may assist the female family head in more effectively performing her homemaker role, reducing the potential for role strain by providing additional time and energy for other tasks and the family. Possission of these items also provides the woman with extra time for herself to participate in activities that are psychologically satisfying for her.

Leisure participation

Bell (1957) reported that relative social isolation, as reflected in low frequencies in leisure time activities both formally and informally was associated with high anomia. In their studies, Marsden (1969) and Goode (1948) indicate that the female family heads in their samples did not get out of the house often for social activities because of various reasons. This increases social isolation and social distance, causing in turn a sense of alienation for the women.

METHODS

Sample and data collection procedures

The data for this study were collected in connection with the Southern Regional Rural Sociology Research Project, S-79, "Rural Development and the Quality of Life in the Rural South in 1972", supported by USDA regional research funds. The principal source of data for this study resulted from family interviewing by professional field workers. Personal interviews were conducted with a stratified random sample of 2,626 households located in 33 low-income counties in the states of Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. Of the total sample of households, 533 were headed by females. This subset of female family heads constitutes the focus of this study.

The independent variables to be analyzed in this study are race, education, income, number of different residences, number of years at current residence, distance moved, number of job types, level of living, and leisure participation with anomia the dependent variable. Following is a description of the measurement of each variable.

Anomia

Anomia has been previously defined as psychological distress, pessimism, despondency, or social alienation. A modified version of Srole's anomia scale was used in order to measure this concept. The original scale, which is still widely accepted and used, was developed in 1956. This scale referred to the individual eunomia-anomia continuum and consisted of eight items to which the respondent could either agree or disagree. However, for the purposes of this study, only five items of the scale were utilized because three were found to have lower item-to-total correlation coefficients and were excluded.

In coding the individual statements, the following scores were assigned: 3, Agree; 2, Don't Know; 1, Disagree. Scores fell in a range from 5-15. The lower the score, the less anomia manifested. The anomia items demonstrated a coefficient alpha reliability of .6 in the subset of female heads of households.

Independent variables

Race refers to the racial status of the respondents who were in this case the female family heads. This variable was coded 1 for whites and 2 for nonwhites.

The amount of education received by respondents (female heads of family) ranged from no education to doctorate degree. Also included was vocation training. Respondents were asked to give the number of years completed in school. The responses were assigned codes ranging from 0-21. The higher the score, the more education attained. This variable was recoded into three education groupings as follows: grades 1-6 were assigned the code "1", grades 7-9 were assigned the code "2", grades 10 and above were assigned a code of "3".

Income refers to the total family income received during the year preceeding the interview. It includes net farm income, non-farm income, spouse income, and income from all other sources and is considered to be a measure of the family's economic adjustment level. This variable was coded from 005 ($0-$999) to 195 ($19,000-$19,999) in intervals of ten.

Number of different places of residence refers to the number of times an individual has changed residence, in this case, during the five years which preceeded the interview. This item was coded from 1 (no residence change) to 4 (3 or more changes). The respondents were asked to specify the number of times they moved during the 5 years preceeding the study.

The number of years at current residence was obtained in the interview. The variable was coded from 1 to 6 corresponding to the responses "no residence change" to "4 or more years" at the current residence.

Distance moved refers to the relationship between the present residence and residence five years preceeding the interview. The variable was coded from 1 (no residence change) to 7 (moved outside the continental United States).

Number of job types was a variable designed to reflect on the number of different job types or work done by the respondent in the five years preceeding the study. Scores were assigned to range from 1 to 6 from one position to five or more positions held.

The concept of level of living refers to the number of aids to housecare which were available to a particular household. Respondents were asked to list those household items which they possessed from a scale of level of living items consisting of an inventory of housecare aids available to the residents of the household. The scores for this variable ranged from 0 (possess none of the items) to 6 (possess all items).

Leisure participation was measured to reflect personal isolation or personal integration. The respondents were asked the number of organizations in which they participated or had membership. This item was scored as to the actual frequency of participation — 0 (never) to 4 (very often).

Results

Table 1 shows zero-order correlations between anomia and selected household and personal characteristics of female family heads. Race was an important correlate of anomia ($r=.233$, $p<.001$). This finding is consistent with many earlier studies of anomia. Women who bore additional burdens of racial discrimination were more likely to experience the self-to-other distance and alienation reflected in this scale.

Income was a negative correlate of anomia in the total sample and for both nonwhites and whites ($r=-.289$, $p<.001$; $r=-.134$, $p<.05$; $r=-.313$, $p<.001$). This relationship has been repeatedly found in previous research, though not for female family heads. Income was a markedly less important factor for nonwhites, however, than it was for the white portion of the sample.

Anomia was not related to education in the total set of female family heads nor in either racial grouping. This finding is contrary to earlier studies that found education levels to be negatively related to anomia. Education may be less important for female heads experiencing the immediate strains of performing multiple roles. Women with higher levels of education may be more acutely aware of the inconsistencies associated with their status as a head of family.

The number of different residences was not related to anomia in the total sample, nor for white female heads of family. Residential instability was positively related to anomia for nonwhites ($r=.164$, $p<.01$). Frequent changes of neighborhood and their accompanying disruption of social networks appears to have a particularly negative effect on the social integration of nonwhites.

Number of years at current residence was negatively correlated with anomia in the total sample and for the subgrouping of white female heads of family ($r=-.042$; $p<.05$; $r=-.181$, $p<.01$). This may suggest that women who were residentially unstable experienced a high degree of social isolation because of the disruptions in social relationships associated with frequent changes of residence. Nonwhites may not experience the stresses of dislocation as acutely because bonds between those sharing like racial and minority statuses may be more readily established and provide greater support than the generalized norms of the white majority. This may be particularly true in the South where patterns of discrimination reinforce minority group solidarity.

Although not highly significant, the distance a female family head moved was a positive correlate of anomia for the nonwhite subgrouping ($r=.130$, $p<.05$). This factor was negatively related to anomia in the white females who were family heads, however ($r=-.118$, $p<.05$). This relationship shows the residential instability of nonwhites and residential stability of whites which possible indicates more social integration and the maintenance of social networks for whites.

There was no relationship between number of different job types and anomia in the total sample of female family heads. However, it was positively related to anomia in the subgrouping of nonwhites ($r=.081$, p $.05$) and negatively related to anomia in the subgrouping of whites ($r=-.053$, $p<.05$), indicating that people who changed jobs frequently were more anomic. This finding is consistent with earlier studies of the relationship between occupational stability and anomia.

Level of living was negatively correlated with anomia for the total sample and for both racial groupings ($r=-.280$, $p<.001$; $r=-.139$, $p<.05$; $r=-.272$, $p<.001$). This relationship indicates that possession of level of living items contributed to reduction in role strain for the women assuming the role of head of the family unit. Level of living was a less important factor, however, for nonwhites than it was for the white subgrouping of the sample. This may be explained by the fact that nonwhites possessed less items on the level of living scale than did the whites.

Leisure participation was also negatively correlated with anomia for everyone in the sample ($r=-.178$, $p<.01$). However, the relationship was not as strong for the nonwhites as it was for the whites ($r=-.151$, $p<.01$ and $r=-.204$, p $.001$). This finding is supported by research suggesting that participation in leisure time activities enables a person to become more socially integrated and to suffer less from the negative feelings of social isolation and alienation.

Table 2 presents the regression of selected personal and household characteristics on anomia. In the total set of female heads of family, income, level of living and leisure participation were all negative predictors of anomia ($B=-.233$, $p<.001$; $B=-.147$, $p<.05$; and $B=-.094$, $p<.05$). These three factors all reflect the general standard of living in a household.

The lack of the resources that enable a family head to obtain the basic material goods prescribed by general social norms may be a source of feelings of estrangement and inadequacy for the family provider. Leisure participation may promote a woman's integration into the community, and increase her acquaintance with others in similar status helping to cope with feelings of social isolation or a perceived label of deviancy.

Race had an independent effect on anomia when other variables were controlled ($B=.122$, $p<.01$). Being nonwhite was associated with higher levels of anomia. Separate regression equations for each grouping show the independent effects of each variable for nonwhites and whites, when other factors were controlled.

Income was the only predictor of anomia for the nonwhite portion of the sample (B=-.178). None of the residential or occupational variables exerted independent effects when all were considered together.

In the white portion of the sample, income was a negative predictor of anomia (B=-.260, $p < .05$), but residential variables emerged as significant factors. The number of years at current residence was negatively associated with anomia (B=-.136, $p < .01$), while the distance moved was a strong positive predictor of anomia (B=.602, $p < .001$). Residential stability may allow a woman to develop a network of exchange relationships and supportive ties that can be a source of assistance when she is faced with the demands from multiple roles. Long distance moves may decrease the amount of contact a woman has with her family and former friends. Migration from another region of the country and associated differences in regional cultures may increase a woman's feelings of isolation and her difficulty in becoming adjusted to the new environment.

The overall regression equations explained 16.5 percent of the variance for the total set of female family heads, only 8.8 percent for the nonwhites, and 15.7 percent for whites. Though several individual determinants of anomia were identified, no clear pattern of relationships emerged.

Discussion and conclusions

The findings of this study indicate that of the nine variables analyzed, only four had significant affects on the anomia level of females who headed families. Race, however, was the most important single contributor of anomia level. This finding was consistent with earlier studies including race as a factor relating to anomia. Nonwhite female family heads had lower income levels than white female heads contributing to their lack of the necessary monetary resources to provide those items relating to level of living that would assist her in the integration of her dual roles. Furthermore, they assist in expediting housework and other homecare activities which provide her with the time to participate in those leisure activities that are enjoyable, psychologically satisfying and socially stimulating. Thus, she is able to maintain the necessary social networks that decrease feelings of isolation and alienation. However, it should not be neglected that stability in occupation and residence are important, although not highly so. This would indicate that she has already established social contacts at work and in the neighborhood in which she resides.

The findings suggest, conclusively, that white female family heads experience a lower anomia level than nonwhite female family heads in the sample that were the focus of this study. They more frequently possess those characteristics that promote self-to-other belongingness instead of the self-to-other distance and alienation indicative of the difficulty nonwhite female family heads often encounter in adjusting to the dual roles of family head and woman.

Table 1. Zero-order Correlations Between Anomia and Selected Household and Personal Characteristics of Female Family Heads

	ANOMIA		
Variables	Total	Nonwhite	White
Race	.230***	---	---
Education	.029	.050	.003
Income	-.289***	-.134*	-.313***
No. of Different Residences	-.087*	.164**	.027
No. of Years at Current Residence	-.080*	-.009	-.181**
Distance Moved	.031	.130*	-.019
No. of Job Types	.000	.081*	-.053
Level of Living	-.280***	-.139*	-.272***
Leisure Participation	-.178**	-.151**	-.204***
	N=527	N=188	N=339

*p < .05

**p < .01

***p < .001

TABLE 2. Regression of Selected Household and Personal Characteristics of Female Household Heads on Anomia.

VARIABLES	ANOMIA TOTAL B	 b/S.E.	 NONWHITE B	 b/S.E.	 WHITE B	 b/S.E.
Race	.122**	.713/.270	---	---	---	---
Education	.059	.170/.012	.121	.238/.015	.014	.540/.020
Income	-.233***	-.221/.004	-.178*	-.206/.010	-.260*	-.227/.004
No. of Different Residences	.055	.384/.396	.050	.269/.524	.057	.449/.591
No. Years at Present Residence	-.083	-.146/.080	.022	.343/.120	-.138**	-.253/.106
Distance Moved	.046	.152/.185	.120	.350/.287	.602***	-.602/.254
No. of Job Types	.072	.243/.150	.103	.331/.268	.056	-.227/.184
Level of Living	-.147*	-.242/.078	-.083	-.110/.103	-.175**	-.373/.118
Leisure Participation	-.094*	-.349/.001	-.104	-.475/.003	-.080	-.270/001
R^2	.165		.088		.157	
Adjusted R^2	.150		.045		.136	
F-Value	10.66		2.07		7.18	
Probability	.001		.05		.001	

$^{*}p < .05$

$^{**}p < .01$

$^{***}p < .001$

REFERENCES

Alleger, Daniel E.
1966 "The anomia of rural people: its measurement and correlates." Agricultural Science Review 4:1-9.

Bachrach, Leona L.
1975 Marital Status and Mental Disorders: An Analytical Reveiw. DHEW Publication No. (ADM) 75-217. Washington, D.C.: U.S. Government Printing Office.

Bell, Wendell
1957 "Anomie, social isolation, and the class structure." Sociometry 20:105-116.

Brandwein, Ruth A., Carol A. Brown, and Elizabeth Maury Fox
1974 "Woman and children last: the social situation of divorced mothers and their families." Journal of Marriage and Family 36:498-514.

Glasser, Paul and Elizabeth Navarre
1965 "Structural problems of the one-parent family." Journal of Social Issues 21:98-109.

Goode, William
1948 After Divorce. Glencoe: The Free Press.

Goode, William
1960 "A theory of role strain." American Sociological Review 25:483-496.

Hunt, Morton
1966 The World of the Formerly Married. New York: McGraw-Hill.

Lee, G. A.
1974 "Marriage and anomie: a causal argument." Journal of Marriage and the Family 36:523-32.

Lenski, Gerhard E. and Leggett, John C.
1960 "Caste, class, and deference in the research interview." American Journal of Sociology 65:463-467.

Marsden, Dennis
1969 Mothers Along: Poverty and the Fatherless Family. London: Allen Lane, The Penguin Press.

McClusky, Herbert and Schaar, John H.
1965 "Psychological dimensions of anomy." American Sociological Review 65:14-40.

Mizruchi, Ephraim H.
1960 "Social structure and anomia." American Sociological Review 25:645-654.

Moon, Seung and Glenn C. McCann
1966 Subregional variability of adjustment factors of rural families in the South. Southern Cooperative Series, Bulletin No. 111. North Carolina Agricultural Experiment Station.

Nix, Harold
1962 Opportunities for and limitations of social and economic adjustments in an Alabama rural county. Southern Cooperative Series Bulletin No. 338. Alabama Agricultural Experiment Station.

Pearlin, Leonard I. and Joyce S. Johnson
1977 "Marital status, life-strains and depression." American Sociological Review 42:704-715.

Powell, Elwin H.
1958 "Occupation, status, and suicide: toward a redefinition of anomie." American Sociological Review 23:131-139.

Simpson, Richard L. and H. Max Miller
1963 "Social status and anomia." Social Problems 256-264.

Srole, Leo
1956 "Social integration and certain correlaries: an exploratory study." American Sociological Review 21:709-716.

Staples, Robert
1971 "Towards a sociology of the black family: a theoretical and methodological assessment." Journal of Marriage and the Family 33:119-138.

Terry, Geraldine B. and Alvin L. Bertrand
1966 The labor force characteristics of women in low-income rural areas of the South. Southern Cooperative Series, Bulletin No. 116. Louisiana Agricultural Experiment Station.

Udry, J. R.
1974 The Social Context of Marriage. Philadelphia, PA: Lippincott.

Weissman, Myrna M. and Eugene S. Paykel
1972 "Moving and depression in women." Society 9:24-28.

Welsh, Jane A.
1973 "Women as heads of household." Journal of the National Association of Women Deans and Counselors 36:166-169.

Section M

EXTENSION SOCIOLOGY

"Countering Macro-structure in the Location of Area Vocational Training Centers: Implications for Emerging Rural Communities." Gerald C. Wheelock, Taylor Byrd, Jr., Chairman; Sanath K. Reddy.

"Perception of Community Problems by Rural Residents and County Leaders: Implications for Citizen Participation." Nelson L. Jacob and Stephen C. Lilley, Clemson University.

"Evaluation of the Effect of Cooperative Extension Service Educational Programs on Attitudes and Knowledge About Land Use Planning." Diana M. Danforth, David K. Miller, Shirley Callaway, and Donald E. Voth, University of Arkansas, Fayetteville.

"Extension's Role in Environmental Quality Education Programs." R. W. Seiders and C. L. Taylor, University of Florida.

Countering Macro-structure in the Location of Area Vocational Training Centers: Implications for Emerging Rural Communities.

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> "If there is to be educational opportunity for all children, then a child's education must not depend on his family's economic resources. But if a family is to be able to provide its children with the best education it can afford, then it must be able to employ its economic resources to do so. These two requirements are in direct opposition."
>
> James S. Coleman
> Coons et al, 1970: vii

In the United States, compared with most countries, neither the private versus public school tug-of-war, nor a dual public school system which terminates early for the masses differentiates the quality of primary and secondary education on a broad scale. Nevertheless, wide-reaching differentiation has come about. Coleman, Coons, and others attribute this primarily to our system of local financing (Coons, 1970). Coincidentally, local residential patterns in the U.S. have become much more homogeneous, largely due to the automobile, a highly efficient highway system, and FHA wholesale financing of one new residential community after another. In this way, whole communities of relatively well-to-do families have achieved greater leverage for their education tax dollar. Meanwhile, the poorer school districts are left behind with a depreciated school facility. If quality is to be maintained, whether the location is in the remote rural areas or the central cities, the declining tax base must bear a much greater tax burden. Clearly, this is not likely to happen.

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While it may be that the better endowed local communities were achieving education excellence for their children, Congress, in 1963 and more forcefully in 1968, was given "fundamental and philosophical attention to vocational education for the first time since 1917." Rather than emphasizing the needs of the labor market as in 1917, the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 (VEA) exhibited a growing sensitivity to "people who needed skills" (Essex, 1968: 1).

The declaration of purpose of the act (VEA, 1968) is to allow that "persons of all ages in all communities of the state will have ready access to vocational training or retraining which is of high quality---". With this unmistakably implied emphasis upon equality, reinforced by repeated references to the disadvantaged (academically, socioeconomic, or otherwise), it would appear that this federal act, in part, was designed to redress the acknowledged inequities which have resulted from local financing of education.

In short, one purpose of this paper is to make an assessment of VEA success in achieving equitable distribution of vocational education facilities and programs. In this study, it is assumed that equality in vocational education, more so than in general education, requires equality of facilities.

As a monitoring tool, to aid in the assessment of equitable distribution of vocational education facilities, the following hypothesis is posited:

> School demography indicators of need rather than local macro-community indicators of wealth and values will predict the location of area vocational training centers (AVTC) as provided for by VEA.

This hypothesis is meant to pit indicators of the conventional allocative criteria of state boards of education against those of the prevailing system of local determination.

The second purpose of the paper is to explore the implications of ignoring the usual community structural prerequisities to locating an AVTC.

Unit of Study and the Dependent Variable

This study is confined to the 67 counties of Alabama. However, the specific variables and data used are standard and are generally relevant and available for all Southeastern states. As is implicit in the design of this study, replication in other states is anticipated.

In concept, an area vocational school would serve more than one school district, would respond more rapidly to the demands of the labor market, and would experiment more aggressively with new programs. The Vocational Education Act of 1963 increased funds for construction of area vocational schools to include training for any non-professional occupation. While the influence of the construction program on the quality of vocational education is difficult to assess, it is agreed that "improvement of facilities through remodeling and renovation and updating and upgrading of equipment used for instruction" is accomplished (Essex, 1968:36).

The term Area Vocational Training Center (AVTC), as used here, is adapted from the Vocational Education Amendments of 1968 (VEA) as it applies in Alabama. AVTC refers to either "(A) a specialized high school used exclusively or principally for the provision of vocational education to persons who are available for study in preparation for entering the labor market, or (B) the department of a high school exclusively or principally used for providing vocational education in no less than five different occupational fields to persons who are available for study in preparation for entering the labor market—" as long as it is available to all high school students in the area (county or city school district) designated by the State Board (VEA, 1968: Sec. 108:2).

Coding of the location by county of the AVTC for analysis is either 1 (one or more AVTC) or 0 (no AVTC). Even though some of the more densely populated Alabama counties contain two or more AVTC, due to the statistical analysis proposed here they are necessarily coded 1. A code of 1 represents access to AVTC by all high school students of the county. To allow monitoring of any trends in location of AVTC with respect to indicators of need and community structure, these data are coded for five separate years (1970, 1974, 1975, 1976 and 1978) of the current dynamic expansionary phase.

Independent Variables: State Allocative Criteria and Local Macro-Structure

Insofar as demographic indicators are used in the allocation of school funds, they are usually used with the intent of a more just allocation. The conventional demographic variable is, of course, school enrollment. The specific indicator employed by the Alabama State Board of Education is the total enrollment in all twelve grades of public school. Second, with respect to vocational education, the proportion of the enrollment which is disadvantaged is an important indicator. In other words, the formula for allocating state and federal funds for vocational education is to be weighted in favor of school districts with concentrations of disadvantaged school-age children.

If these two criteria, enrollment and percent disadvantaged, determined allocation of vocational education facility expenditures, the objectives of equality and, perhaps, even compensation for past inadequacies would be well served. The allocative procedure would conform to a linear combination of the number of youth and the proportion of disadvantaged youth with some prescribed weight assigned to the two variables. In other words, if funding were centralized, an equitable allocation of vocational education funds would be quite simple. However, other factors weigh heavily on the outcome. Most of these relate closely to local community structure, growth trends and values placed on vocational education per se. First, among local macro-structural variables, local institutional structure, industry, and business determine both the demand for vocational education and the tax base available to support it.

More generally, what is sought here is an index of a county's structural complexity. As has been shown in numerous studies, e.g., Young and Young, (1973), a seemingly wide variety of measures may be used to index the complexity dimension. Here, for simplicity, a single index of complexity has been chosen at the outset. It is the number of employers, according to a preliminary report of the 1972 Census of County Business Patterns, that engages 20 or more employees.

Perhaps the most important factor in determining the acceptability of a vocational education stream in the high school curriculum is the local community values system.

Community values with respect to vocational education may vary widely, particularly in the South. Historically, students in rural areas were probably the greatest benefactors of the first Congressional support of vocational education, the Smith-Hughes Act of 1917. However, history is quite clear on the point that blacks have not been inclined to accept an industrial education in lieu of an equal general education. Henry Allen Bullock (1967) observes that by 1933-34, as a collective result of the initiative of several private funds, including the Slater Fund, the Jeanes Fund, and the Rosenwald Fund, dating since 1908, "there was hardly a Southern Negro Community in which a county-training school was not operating (1967: 153)." Thus, the area vocational training school concept is "old hat" to the black community. However, "---Negro education, instead of being specialized along industrial lines, became somewhat of a duplication of the education which was offered to white children. It was separate; it was judged in terms of the value scale held for Negroes; and it symbolized America's dual standard of academic competency" (Bullock, 1967: 466).

The same revolutionary spirit may well be influencing implementation of VEA today. For example, Sally Barber Spitzer of the National Urban League's Education Policy Information Center, writes: "(Career education) may be used as a weapon of oppression against the community of non-whites in this country, trapping them into an occupational fiefdom of servitude to a privileged professional class" (Marland, 1973: 114).

While it may well be that the absolute opposite is intended by those who advance the theory, the poor track record of our system in elevating minority people to a position of equality in employment is well known. Unemployment for blacks is commonly twice as high as for whites. Such evidence, reinforced on a daily basis, is enough in itself to underpin any reluctance of black educators and influentials to support vocational education today.

As an indicator of the latent negative values held by the black community for vocational education, the proportion non-white public school enrollment is used. It is acknowledged that the above interpretation of the percent black index may be seriously challenged. For example, a high proportion black is a strong indication that the district is a poor one. A high percentage of black enrollment is also likely to be positively correlated with the proportion of disadvantaged youth in a district. Therefore, the hypothesized negative effect of black enrollment, and the hoped-for positive effect of a high proportion of disadvantaged youth upon the location of AVTC run counter to one another.

In partial answer to the question of validity, the following multi-variate analysis attempts to control for alternative interpretations of the percent black indicator, specifically, wealth of district and percent disadvantaged youth.

It will also be observed that in other studies the proportion non-white correlates highly with indexes of social rigidity and economic stagnation or, conversely, openness of social structure (Nicholls, 1960; Young and Moreno, 1965). If this interpretation were to be employed, the same empirical results would be expected, but they would be attributed to continued discrimination against the black community rather than to rejection by the black community of a palliative (AVTC) in lieu of compensatory capital investment in general education. This empirical analysis will not settle the debate as to which of these two interpretations is more viable. It may be that both influences are at work and, therefore, reinforcing one another. However, given the history of unwillingness to accept vocational education as a substitute for a liberal general education, it is the authors' judgment that values held by black educators and influentials are largely responsible for the low probabilities of AVTC locations in predominantly black counties. If educators in predominantly black counties had placed a high value on vocational education during the early 1970s and had worked as diligently as other counties toward establishing AVTC, it is hard to believe that their efforts would have gone unrewarded. Of course, further research could settle this debate.

Result: Zero-order Correlations

As expected, there are moderate to strong product-moment correlations (r) among the independent variables as well as between the independent variables and location of AVTC. Both of the state level administrative criteria, school enrollment and proportion disadvantaged, are highly correlated with their counterpart indicators of local structure and values. Specifically, school enrollment ($\log_n$) and large employers (Log_n) have an r of .93 and percent disadvantaged and percent non-white enrollment have an r of .85 (Table 1). However, the disadvantaged indicator is more negatively correlated with the size variables, -.54 and -.39, than is the percent non-white indicator of values, -.33 and -.22. It is no surprise that the disadvantaged variable is more negatively correlated with the size variables than is the non-white variable, given the much higher migration rate of blacks from depressed rural areas.

Table 1: Means, Standard Deviations and Correlation Coefficients

Parameters and Variables	1.	2.	3.	4.	5.	6.	1970	1974	1975	1976	1978
Mean	8.94	45.52	3.77	37.60	3.0	6.9	.40	.51	.58	.60	.69
Standard Deviation	0.81	27.46	1.13	27.53	15.5	8.9	.49	.50	.50	.49	.47
1. School Enrollment 1 - 12, 1972 (Ln)[1]		-.54	.93	-.33	.46	.38	.65	.59	.50	.51	.38
2. Percent Disadvantaged Youth, 10 - 17[2]			-.39	.85	-.61	-.34	-.44	-.47	-.55	-.56	-.34
3. Establishments 20 + Employees (Ln)[3]				-.22	.36	.27	.57	.52	.42	.41	.27
4. Percent School Enrollment Non-White[1]					-.57	-.29	-.37	-.50	-.55	-.56	-.29
5. Population Growth Rate[4] 1960 - 1970						.23	.45	.45	.41	.43	.23
6. Population Growth Rate[4] 1970 - 1976							.13	.24	.25	.30	.14

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[1] Alabama Department of Education. 1975. Annual Report. State Office Building, Montgomery

[2] Alabama Department of Education. 1977. Alabama State Plan for Vocational Education, Montgomery (Based on 1970 Census)

[3] U. S. Bureau of the Census, 1974. County Business Patterns for 1972 for Alabama counties.

[4] Center for Business and Economic Research. 1977. Economic Abstract of Alabama. The University of Alabama, University, Alabama.

[5] An Area Vocational Training Center exists to serve the county school system = 1; if not present = 0

With respect to location of AVTC, the school enrollment correlation declines from a high of .65 in 1970 to .38 in 1978. This decline suggests that the percent disadvantaged may be exerting its influence in the allocative process. However, the zero-order correlation suggest the oppositive until 1978. The negative r of percent disadvantaged with AVTC increased from a -.44 in 1970 to -.56 in 1976. Only in 1978 did the negative correlation decline to -.34.

Similar to enrollment, the employer-complexity variable exhibits a declining correlation from .57 to .27 over the 8-year period while the negative influence of percent non-white is increasing from -.39 to a -.56 correlation before declining to a -.29 in 1978. The population growth trend (1960-1970) maintains a correlation between .41 and .45 with AVTC location until 1978 when the correlation drops to .23. Estimates of recent growth (1970-1976) show weaker correlation with AVTC location.

In general it may be observed that since 1970 there has been a tendency to locate AVTC in smaller communities with increasingly smaller enrollments.

Observation of the zero-order relationships is consistent with the prior expectations of the influence of these variables upon AVTC location. But, the correlations do not answer the question as to whether the complex of community values, indexed by the predominance of the Black community, alter the pattern of locating AVTCs in the larger systems first. The negative correlation between enrollment size (SELn) and %NW may simply mean that the larger systems which have proportionately fewer blacks are establishing the centers first and the smaller rural systems with proportionately more blacks are waiting their turn. If this hypothesis is supported, the following multivariate analysis will show a strong positive regression coefficient for the enrollment variable and a non-significant coefficient for the %NW variable.

However, the previous discussion suggests that both a positive effect for SELn and a negative effect for %NW will prevail.

The second question regards the consideration for the proportion of the youth which are disadvantaged in the process of locating AVTC. In theory this variable (%YD) should be the second consideration, next to total enrollment in allocating AVTCs. The negative correlation in Table 1 suggest little regard is given to the disadvantaged.

Again, the picture appears to be complicated by the lack of a strong interest in vocational education in the disadvantages rural black communities which have few local employment opportunities anyway.

A multiple regression equation which controls for both the size of enrollment and the proportion of the enrollment which is black may well yield a positive effect for the proportion disadvantage variable.

Regression Model Predicting AVTC Locations: Disadvantaged Rates Versus Local Value System

While classical least-squares is the procedure most commonly applied to analysis of a dichotomous dependent variable (Orcutt et al, 1961; Wheelock, 1974) there are certain weaknesses in this approach. Specifically, the classic assumption of homoscedasticity is untenable, and the predicted probability of the occurrence of an AVTC may fall outside the interval between 0 and 1, and, therefore, is inconsistent with the probability interpretation (Goldberger, 1964: 249-250).

Substantively, however, in comparison with more sophisticated, but less readily available estimating procedures, ordinary least-squares procedures have proven generally reliable (Johnson, 1972: 183). With respect to log-linear models, Knoke (1975: 416) has observed that their results converge with those of regression models when the proportion of the dependent dichotomy is between .25 and .75. In this case, the proportions range from .40 in 1970 to .69 in 1978.

Therefore, the ordinary linear regression procedure is used to obtain classical least-squares estimators of the conditional probability of the location of AVTC, the dependent variable (Goldberger, 1964:249).

The linear regression model used is as follows:

1.0 $\quad AVTC_i = B_0 + B_1\, SEL_n + B_2\, \%NW + B_3\, \%YD + E$

When $AVTC_i$ = 1 if AVTC is present in county or 0 if AVTC is not present for i = 1970, 1974, 1975, 1976 and 1978,

B_0 = the intercept,

$B_1 - B_3$ = the unstandardized partial regression coefficients for $X_1 - X_3$ respectively,

SEL_n = log of the total public school enrollment (1-12) in the county -1974

%NW = % of total public school enrollment (1-12) which is non-white,

%YD = % of youth population which is disadvantaged (age 10-17), and

E = error of estimate.

The regression analysis presented here includes the results of data fit to the above model for each of five periods.

The community values versus size of school enrollment hypothesis is tested using the first two independent variables (SELn and %NW) while the hypothesis of a positive effect for proportion of youth which are disadvantaged (%YD) is tested using all three independent variables.

Table 2: Replications of a Test for the Community Values Hypothesis by Multiple Regression (67 Alabama Counties)

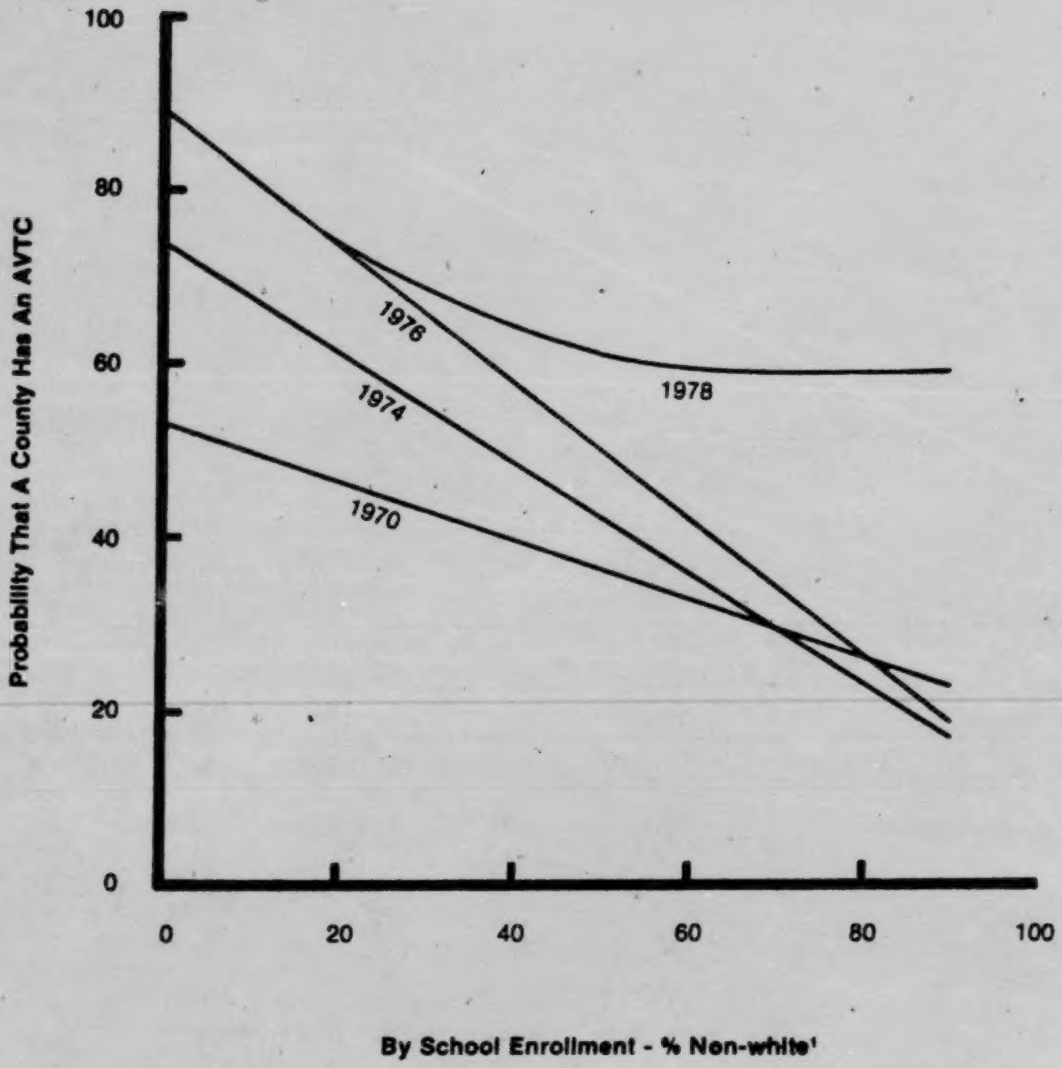
	SELn	%NW	$\%NW^2$	$\bar{R}^2$
$AVTC_{70}$ = .563	+.060	-.0032		.43
	(5.97)	(-1.81)		
$AVTC_{74}$ = -1.876	+.293	-.0063		.43
	(4.80)	(-3.49)		
$AVTC_{75}$ = -1.094	+.221	-.0079		.40
	(3.58)	(-4.33)		
$AVTC_{76}$ = -1.099	+.223	-.0079		.42
	(3.69)	(-4.45)		
$AVTC_{78}$ = -.828	+.191	-.0078	+.000052	.14
	(2.71)	(-1.19)	(0.78)	

Table 3: Replications of a Test for the Proportion Youth Disadvantaged as a Criteria for AVTC Location by Multiple Regression.*

	SELn	%NW	%YD	$\bar{R}^2$
$AVTC_{70}$ = -2.906	+.380	-.0048	+.0022	.43
	(5.40)	(-1.47)	(.59)	
$AVTC_{74}$ = -2.526	+.354	-.011	+.0062	.45
	(5.03)	(-3.32)	(1.68)	
$AVTC_{75}$ = -1.173	+.228	-.0084	+.00075	.40
	(3.15)	(-2.49)	(.198)	
$AVTC_{76}$ = -1.156	+.229	-.0083	+.00054	.41
	(3.21)	(-2.51)	(.144)	
$AVTC_{78}$ = -.877	+.187	-.0036	+.00084	.13
	(2.32)	(-.95)	(.199)	

*t-values for the unstandardized regression coefficients are enclosed ( ).

FIGURE 1 LOCATION OF COUNTY-WIDE AVTCs (1970 - 1978) IN 67 ALABAMA COUNTIES



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[1] The partial regression slopes presented above, AVTC dummy variables regressed on % non-white school enrollment, represent the predicted probabilities that 67 Alabama counties with non-white enrollments ranging from less than 1.0 to more than 90.0 percent have an AVTC in 1970, 1974, 1976 and 1978. The intercepts are adjusted for significant effects and mean values of enrollment (SELn). See the full equations in Table 2.

In Table 2, it is clear that school enrollment is the strongest predictor variable throughout the period. Local values in the form of the percent non-white school enrollment exert a strong influence on AVTC location in 1970 and increasingly strong influences in 1974, 1975 and 1976. As observed in Table 1 the effect declines here as well. Increasing effects of this variable may be made more graphic by plotting the partial regression coefficients for AVTC regressed on non-white enrollment.

The regression slopes in Figure 1, adjusted for the mean value of the control variable, represent, with respect to their non-white school enrollment ratio, the predicted probabilities of an AVTC being located in Alabama counties. This slope adjusted for the other variables accounts for more than 40 percent of the variance in AVTC location for each of the first four periods. In 1978, the new AVTC facilities in the six predominately black Tennessee-Tombigbee Waterway counties cause a considerable adjustment in the regression fit. This represents an unprecedented emphases on potential economic development of an area, as opposed to elaboration of continuing development patterns in the location of AVTCs.

The second hypothesis that AVTCs are located with respect to the proportion of youth who are disadvantaged is weakly supported only after controlling for the proportion of enrollment which is black (Table 3). The coefficients for the disadvantaged youth ratio are positive for all years. Among smaller white communities, those with lower incomes and more disadvantaged youth are establishing AVTC's before small but slightly wealthier communities. Presumably the same positive effect hold for %YD amomg the smaller racially mixed and predominately black communities but the location of an AVTC is much less frequent. Finally, it should be noted that the addition of controls for population change and county business patterns do not alter the signs of the coefficients in these equations.

Discussion

Much more intimate familiarity with the policy-making process is required to understand the cause of the trends observed here, but policy-makers, both state and federal, as well as the local public, should consider the meaning of these data. Successful implementation of AVTC in rural school systems in an environment nearly void of the influences of a modern industrial community and labor force will be more difficult than usual.

Rural industrialization, particularly labor intensive manufacturing, may be selectively locating in communities with concentration of low income labor thus reinforcing the policy criteria favoring communities with high proportion of disadvantaged. If so there is a potential match of interest between the school leaders and new rural industry.

Indeed this is already happening. The sharp increase in the number of AVTC in the predominately black counties is almost exclusively due to six new AVTC's in contiguous counties along the Tennessee-Tombigbee Waterway. A major company in the dominant timber industry of the area has made the initial contributions needed to attract sufficient state and federal money to build the schools. While industry apparently recognizes the dramatic transition which the local labor force is about to experience, e.g., automation of the timber industry, local values may still be lagging.

Rural oriented vocational educators will have to retool more rapidly. The vocational education planning process will have to incorporate many more representatives of industry and business if it is to equip local youth and adults with work habits and skills necessary to get the quality jobs they aspire too. More community organizational skills will have to be developed in order that quality industries will be attracted to the area. In short, the process must be an integrated effort to create desirable jobs, train manpower for the jobs and place the people trained. (Pelham, 1974).

Rural communities with growth potential as proposed by Jonathan Sher (1977) may be well advised to encourage their schools to take the lead in the form of a school organized-community development corporation. Job creation, job training and job placement could thus be an integrated activity. A final look at Figure 1 makes it amply clear that their are no directly applicable precedents for the predominately black rural communities to follow. They have their AVTCs but little else in common with the larger more industralized and urbanized communities. In the urban communities perhaps education can afford to play a highly specialized role. There are other sectors to take up the slack. In a potentially emerging rural area it seems only logical that education must be the leading sector in the development process. If the local school board, advisory councils and educators fail to assume leadership, who else is there?

Counter to the prevailing trend of locating AVTCs in places where the nest was ready made, AVTCs in these rural Southeast Alabama towns are faced with the task of either developing a nest for themselves or floundering and failing to provide a worthwhile service to their communities. They are much more conspicious in their remote rural settings than are AVTCs in the rest of the state. Their failures or successes will be more visible than elsewhere. The stakes appear to be high. On the other hand, it is hard to conceive of the AVTCs succeeding without the larger community succeeding too. Failure of AVTCs to these communities would only be an extension of the 1960s. Thus a joint school-community development cooperation would appear to be a logical strategy.

Bullock, Henry Allen. 1967. A History of Negro Education in the South from 1619 to the Present. Harvard University Press, Cambridge.

Center for Business and Economic Research, E. P. Rutledge, Director. 1974. Supplement to Economic Abstract of Alabama, 1972. Printed Series No. 43. Graduate School of Business, The University of Alabama. University, Alabama.

Cohen, Jacob. 1968. Multiple Regression as a General Data-Analytic System. Psych. Bul. 70: 426-443.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederick D. Weinfeld, and Robert L. York. 1966. Equality of Educational Opportunity, U. S. Government Printing Office.

Comptroller General of the United States. 1974. What is the Role of Federal Assistance for Vocational Education? USGAD Report to the Congress. B-164031 (1). December 31, 1974.

Coons, John E., William H. Clune III, and Stephen D. Sugarman, 1970. Private Wealth and Public Education, Belknap Press of Harvard University Press, Cambridge.

Division of Vocational Education and Community Colleges, Alabama. 1972-73, 1973-74, 1974-75. Alabama State Plan for Vocational Education. State Department of Education, Montgomery.

Division of Vocational Education and Community Colleges, Alabama. 1974. Alabama Area Vocational Centers (Mimeograph).

Essex, Martin W., Chairman, Advisory Council on Vocational Education. 1968. Vocational Education: The Bridge Between Man and His Work. Publication 1, Office of Education, U. S. Department of Health, Education and Welfare, Washington.

Goldberger, A. S. 1964. Econometric Theory. John Wiley & Son, Inc. New York.

Knoke, David. 1975. A Comparison of Log-Linear and Regression Models for Systems of Dichotomous Variables. Sociological Methods and Research 3 (May): 416-434.

Marland, Sidney P., Jr., 1973. Career Education: A Proposal for Reform. McGraw-Hill, New York

Nicholls, William H. 1960. Southern Tradition and Regional Progress. Chapel Hill: University of North Carolina Press.

90th Congress, H. R. 18366. 1968. Public Law 90-576: Vocational Education Amendments of 1968. U.S. Government Printing Office, Washington, D.C.

Orcutt, Guy H.; Greenberger, Martin; Korkel, John; and Rivlin, Alice M. 1961. Microanalysis of Socioeconomic Systems: A Simulation Study. Harper and Row, New York.

Pelham, John. 1972. Manpower Development in the Community Context. Social Science Research Center, Report 42. Mississippi State University, State College, Mississippi.

Sher, Jonathan P. 1977. Education in Rural America: A Reassessment of Conventional Wisdom. Westview Special Studies in Education, Westview, Boulder, Colorado.

U. S. Bureau of the Census. 1972. Census of Population: 1970. General Social and Economic Characteristics-Final Report. PC(L)-C2 Alabama U. S. Government Printing Office, Washington, D. C.

U. S. Bureau of the Census. 1973. County Business Patterns, 1972. Alabama CBP-72-2. U.S. Government Printing Office, Washington, D. C.

Wheelock, Gerald C. and Frank W. Young, 1973. Macrosocial Accounting for Municipalities in the Philippines: Rural Banks and Credit Cooperatives. Cornell International Agriculture Bulletin 26. Cornell University, Ithaca, N.Y.

Young, Frank W. and Ruth C. Young. 1973. Comparative Studies of Community Growth. Rural Sociological Society Monograph. Number 2. West Virginia University, Morgantown.

Young, Ruth C. and Moreno, Jose A. 1965. Economic Development and Social Rigidity: A Comparative Study of the Forty-eight States. Econ. Development and Cult. Change 13 (July): 439-452.

Perception of Community Problems by Rural Residents and County Leaders: Implications for Citizen Participation*

by

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and
Stephen C. Lilley

Introduction

Whether rural community development is defined as a process, a social movement, a method, or a program (ECOP, 1966:11), there is general agreement that some form of public involvement[1] is one of the essential components. "Sunshine laws" and legislation specifically mandating public involvement as a prerequisite for obtaining Federal funds in many project areas indicate that heightened public awareness and involvement has become a policy goal, particularly at the Federal level.

Achievement of a high degree of involvement as a policy goal appears however to depend less on Federal mandate than local preference. In a critical analysis of the relationship of Federal policy to local practice, Mogulof (1970a: 1970b) found that the character of public involvement is more determined by local factors than by Federal policies. In reference to several programs studied, he found an inverse relationship between the strength of the national policy regarding public involvement and citizen influence on policy making at the local level.

One method by which public involvement in public decision-making has been promoted is the community self-survey. According to the Southern Community Resource Development Committee (1973), community self-surveys or problem identification surveys as a technique for initiating public awareness and involvement in the community problem solving process has gained wide acceptance among community development practitioners. Recently, however, the question of who in the community should be responding to the surveys and thereby determining the priorities for specific programs of amelioration has been receiving some attention. Clearly, in order for citizen involvement to work, some identifiable segments of the public as well as the leadership structure must be polled as to the relevant and solvable problems. However, the question of how the information is to be "weighted" and then placed in the decision-making structure remains. Prior to defining the process of using problem identification surveys in public decision-making, several questions must be considered. First, are citizens

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[1] Public involvement is a general concept which encompasses such popular terms as: citizen awareness, citizen participation, and citizen involvement.

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able to fully understand and articulate community needs and identify alternative solution; second, do citizens and leaders agree in their assessment of community needs; and third, to what degree should the public be directly involved in the decision-making process under our representative government?

Citizen Articulation of Community Needs

In reference to the first question, the results of state-wide problem identification surveys using mailed questionnaires carried out in North Carolina (Christenson, 1973) and Kentucky (University of Kentucky, 1975) suggest that residents in general are both willing and able to articulate community needs. In administering a problem identification survey among a random sample of rural residents of a low-income rural county, we also found that, given an opportunity, residents readily participate in community decision-making through the identification of community problems. (Lilley, et. al. 1977) Based on these preliminary observations, we will proceed on the assumption that citizens can effectively participate in providing information concerning community problems.

Citizen Versus Leader Assessments

We are aware of only a few studies that have examined empirically the question of whether or not leaders and other citizens agree on their perception of local problems. In several Georgia counties, Nix and associates (Nix and Seerly, 1973; Nix, et. al., 1974) found that positional and reputational leaders tended to rank coordinative needs[2] higher than citizens. Citizens on the other hand tended to rank exchange needs[3] higher than did leaders. Osgood and associates (1977) conducted a telephone survey of randomly-selected households and mailed identical questionnaires to elected officials in a predominately rural county in Pennsylvania. As was the case in Georgia, they found that the leaders were more concerned with coordinative needs and the citizens with exchange needs. Furthermore, they found that the two groups varied significantly in their ranking of the twenty-five specific issues mentioned. The Osgood, et. al. study concluded that the opinions of officials and citizens are not the same and as a consequence, there is a definite need for citizens' surveys in community decision-making. Also, the officials often responded that citizens are not willing to work for the good of their community. In such cases, however, officials could be expected to be less than enthusiastic about efforts to increase public involvement.

Degree of Public Involvement

As indicated earlier, increased public awareness and involvement has become a policy goal at the Federal level. Units of government, agencies, and organizations administering Federally funded programs are being asked to more carefully promote and monitor public involvement in their goal-setting and programmic processes. The promotion of public accountability at state and local levels of government suggests that sentiment is that increased citizen involvement is shared goal at all levels. The reason debate exists on this topic is that, often, there are conflicting expectations concerning the implicit and explicit goals of a public involvement program. The assumptions we are making in approaching the topic is that an increase in the quality and incidence of public involvement in community decision-making will result in improvement in the quality of programs designed to eliminate or ameloriate identified community problems. Furthermore, appropriate educational programs for public officials and the general public will have a positive effect on the quality and incidence of public involvement.

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[2] Coordinative needs are defined as needs to improve relationships or improve structural arrangements for better relationship between groups and organizations.

[3] Exchange needs are needs for goods and services in return for labor and taxes.

Problem Identification

As part of the research phase of the Title V (Rural Development Act of 1972) project in South Carolina, two problem identification surveys were conducted in rural Williamsburg County. The first, conducted in 1974, involved a purposive sample of forty-one positional and reputational leaders. The second survey was conducted in 1976 and involved a random sample of approximately 215 rural households drawn from the unincorporated areas of the county.[4] In the leaders' survey, the respondents were asked, "What do you think are the most important improvements that should be made to make Williamsburg County a better place to live?" In the case of the rural residents a list of twenty-two problem areas was presented and the respondent was asked to rate each as a serious problem, moderate problem, or not a problem. . Table 1 presents the findings from the leaders's survey, indicating the percentage that mentioned each of the specific problems. Table 2 indicates the percentage of rural residents surveyed that rated each suggested problem area as a "serious" or "moderate" problem.

There were differences in the methodology employed in collecting the data from the two groups and the studies were conducted at two different points in time. Consequently, no attempt will be made to compare the rankings of specific problem areas. Instead, some observations of a general nature will be made. First, differences in the opinions of rural residents and the leaders concerning the priority problem areas appear to be of a magnitude to warrant the inclusion of citizens' surveys as a component in the community decision-making process. For example, "adequacy of fire protection," the most frequently mentioned problem among the rural residents was not even mentioned by the leaders. In addition, all of the needs expressed by the leaders can be classified as exchange needs. Based on research discussed earlier, we would have expected the leaders to mention coordinative type needs. With the lack of comparable data we cannot however draw any conclusions concerning the differences in the relative importance of exchange and coordinative needs between the leaders and citizens.

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[4] Methodology and techniques employed in the 1975 survey are fully treated in Jacob, et. al., 1975 and the methodology of the 1976 study is fully described in Lilley, et. al., 1977.

TABLE 1

Results of 1974 Leader Survey: Problem Identification
Frequency of Mention

Problem Area	%
Industry	20
Education	12
Employment, jobs and labor	11
Recreation - facilities and programs	10
Water and sewer systems	2
Housing	7
Improve or increase agricultural production	4
Health care and services	4
Cultural and aesthetic	3
Race relations	3
Tax equalization	3
Business developement	2
Preserve identity of community	2
Living standards	2
Transportation	8
Work incentives, attitudes	2
Community improvement and services	1
Law enforcement	1
Natural resources and the environment-protect and preserve	1

TABLE 2

Results of 1976 Citizen Survey: Problem Identification
Frequency of Mention

Problem Area	Moderate or Serious Problem %
Adequacy of fire protection	68.0
Job Opportunities	67.6
Adequacy of medical facilities	55.7
Industrial Development	53.4
Availability of recreational facilities for children	43.0
Availability of adult recreation facilities	39.7
Adequacy of nursing home facilities for older retired persons	38.8
Effectiveness of law enforcement	37.5
Availability of public transportation	35.7
Conditions of streets and roads	34.3
Availability of public housing	33.4
Adequacy of child care facilities	32.9
Adequacy of welfare program	32.4
Willingness of people to work for good of community	29.7
Adequacy of county school system	27.8
Opportunities for participation of people in community activities	26.5
Adequacy of library facilities	22.9
Availability of financing for home building and other needs	22.3
Adequacy of garbage collection and disposal	20.1
Adequacy of sewage disposal	16.9
Adequacy of technical education	11.9
Adequacy of water supply	11.4

Participation and Involvement

In an attempt to obtain information concerning attitudes and behavior relating to public involvement, a series of questions were included in the citizens' survey. After each problem rated "moderate" or "serious," the respondent was asked:

CITIZEN INVOLVEMENT

Are you involved in trying to solve this problem at this time?	Do you serve on any citizen's committees that work on this problem?	Are you an active leader in this area?	Do you support public officials who want to make improvements in this area?

(If Yes)

ATTITUDES TOWARD PUBLIC EXPENDITURES

Would you be willing to pay more taxes to help solve this problem?

The percentage range of all respondents answering yes to each of these questions was:
Involved in solving problem: 0.5 - 5.9%
Serve on committee: 0 - 2.3%
Active Leader: 0 - 2.3%
Support public officials: 0 - 4.1%
Willing to pay more taxes: 4.6 - 30.1%

These data indicate that relatively few respondents have been directly involved with solving the identified problems, either by serving on a committee, serving as a leader, or by openly supporting public officials. Somewhat larger proportions are positively disposed to paying more taxes to solve the problems than are directly involved in solving the problems. The findings are in support of Tankersley's (1976) agrument for distinguishing between citizen participaion and citizen involvement. According to Tankerley, involvement is when the individual or group is physically present and interacting whereas participation is vicarious involvement through a chosen representative. In his words, "Most citizens demanding participation are not demanding involvement . . . . They are demanding that citizens of their choice be involved." (Tankersley, 1976: 4). We interpret the positive attitude toward paying additional taxes to solve the particular problems as an indicator of willingness to participate whereas the other questions tap actual involvement.

The involvement - participation distinction made by Tankerley allows for alternative perspectives in dealing with certain problems in public involvement. For example, a poor response to efforts to promote citizen involvement can be a consequence of lack of interest or concern and/or due to the fact that a high percentage of the general public feel that their interests are being served or protected by those who are involved.

Summary and Discussion

The research reported here was conducted and results used in a manner to support Extension Community and Resource Development (CRD) programs in the target county. The 1974 survey utilizing positional and reputational leaders provided data for forming Extension CRD Advisory Committees and for developing technical assistance and educational programs in the problem areas most frequently mentioned. It was observed, however, that a high percentage of the leaders interviewed lived in the county seat, quite possibly resulting in an urban bias in the types of problems identified. For that reason, the 1976 survey of households of the unincorporated areas of the county was formulated to provide reliable information to decision-makers and to provide opportunities for rural residents to participate in deciding priority issues.

Based on our observations, industry and jobs, health care and medical facilities, and recreation have proven to be topics of concern of all sectors of the population and this was verified in both surveys. Beyond that, relative importance of issues varied considerably. Research instruments of identical or comparable design would be necessary to compare the rankings of community problems. While a "perfect match" of identified priorities based on citizens surveys on one hand and a survey of community leaders on the other is not likely, should significant discrepancies exist, the need for a more effective exchange between leaders and citizens is clearly established.

Information concerning attitudes toward and actual incidence of participation in community development programs can be particularly beneficial to community leaders when deciding on particular strategies of public involvement to employ. Also, such information can serve as benchmark data for monitoring changes in attitudes and behavior and for evaluating the effectiveness of various participation and involvement strategies.

Participation Training

We agree with Mogulof when he states: "If most Federal policy with regard to citizen participation is erratic and piecemeal, policy with regard to the training of citizen participants is almost non-existent" (1970b: 68). We would, however, go one step further and say that in many cases, the lack of training is perhaps more an attitudinal and perceptual problem among local officials and citizens than an actual lack of opportunities for training. Specially, our observations agree with Mogulof in his statement that when discussing citizen participation, ". . . citizen has become a euphemism for those who are poor, black, and brown" (1970a: 2). This has evolved because minority groups have viewed the stress on citizen participation and the resulting public hearings and other group activities as a means for consolidating a leadership position in the minority community. With this in mind, local officials are often reluctant to increase and expand opportunities for citizen participation beyond what is minimally required by law, if such participation could ultimately represent a threat to the local officials' own power or relative status in the community.

We suggest that there are various types of Extension educational programs which could lead to the implementation and further development of locally-based citizen participation programs. First, educational programs are needed which clarify the various functions of citizen participation[5] and the appropriates of various participation strategies. Heberlein (1976) presents a list of alternative involvement strategies and discussess the appropriateness of each in terms of the various objectives for involving the general public. A familiarization with these strategies and techniques will allow leaders and citizens to get beyond the point of automatically associating "citizen participation" wih a hastily-organized public meeting. (See Appendix I for an elaboration of Heberlein's ideas) Recent state-level programs in "anticipatory democracy" (summarized in Baker, 1976) have demonstrated that by bringing citizens and leaders together and employing various interactive techniques of involvement, positive attitudes toward public involvement can be developed and reenforced.

Despite some of the criticism of the self-survey resulting from too frequent use or poor design (Jordan, et. al., 1976b; Littrell, n.d.) it is "the only technique, other than talking to every citizen, which is capable of being statistically representative of all citizens" (Jordan, et. al., 1976b: 240). We suggest therefore that periodic - though not too frequent - problem identification surveys are an essential component of citizen participation programs. Dillman (1977) explores alternative unobtrusive techniques for collecting reliable data and suggests ways of using telephone and mail surveys to facilitate the data collection process and eliminate some of the negative reaction associated the time-consuming personal interviews.

Ultimately, the effectiveness of citizen participation programs will depend on the attitudes of political leaders who are charged with the responsibility of deciding how resources will be allocated. If the leaders can convince citizens that their input is welcome and that it will contribute to the solution of social problems, and effective program of participation is likely to evolve. (Office of Exploratory Research and Problem Assessment, 1973: 24) Beyond that, a working knowledge of the various techniques will facilitate and enhance the quality of subsequent participation.

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[5] Alternative functions of citizen participation range from legitimizing an agency's program to the building of neighborhood power groups able to influence policy concerning resource distribution.

REFERENCES

Arnstein, Sherry R.
1969 "A ladder of citizen participation." American Institute of Planners Journal, July: 216-224.

Baker, David
1976 "The states experiment with 'anticipatory democracy.''' The Futurist, October: 262-271.

Burke, Edmund M.
1968 "Citizen participation." American Institute of Planner Journal, September: 287-294.

Christenson, James A.
1973 Peoples Goals and Needs in North Carolina. Raleigh: North Carolina Agricultural Extension Service, Miscellaneous Extension Publication No. 106.

Dillman, Don A.
1977 "Preference surveys and policy decisions: our new tools need not be used in the same old way." Journal of the Community Development Society 8 (Spring): 30-43.

Gibson, Duane L. and Francis X. Mulvihill
1970 "Rural strategies and urban strategies: the same or different?" Journal of the Community Development Society 1 (Fall): 21-29.

Heberlein, Thomas A.
1976 "Principles of public involvement." Madison: University of Wisconsin, Department of Rural Sociology, Staff Paper Series in Rural and Community Development.

Jacob, Nelson L., Adger B. Carroll, and Edward L. McLean
1975 "Title V in South Carolina: objectives, plan of work, and ongoing activities." Proceedings, Rural Sociology Section of the Southern Association of Agricultural Scientists Annual Meeting, New Orleans.

Jordan, DeSoto, Sherry R. Arnstein, Justin Gray, Ellen L. Metcalf, Wayne R. Torrey, and Florence W. Mills
1976a Effective Citizen Participation in Transportation Planning Volume 1: Community Involvement Process. Washington, D. C., U. S. Department of Transportation.

1976b Effective Citizen Participation in Transportation Planning, Volume 11: A Catalog of Techniques. Washington, D. C., U. S. Department of Transportation.

Lilley, Stephen C., Edward L. McLean, and Nelson L. Jacob
1977 "Factors related to contact with Cooperative Extension Service programs in a rural county." Proceedings, Annual Meeting of the Mid-South Sociological Association, Monroe, Louisiana.

Littrell, Donald W.
n. d. "The theory and practice of community development: a guide for practitioners." Columbia: University of Missouri, Department of Regional and Community Affairs.

Mogulof, Melvin
1970a Citizen Participation: a Review and Commentary on Federal Policies and Practices. Washington, D. C., The Urban Institute.

1970b Citizen Participation: the Local Perspective. Washington, D. C., The Urban Institute.

Nix, Harold L. and Norma R. Seerley
1973 "Comparative views and actions of community leaders and nonleaders." Rural Sociology 38 (Winter): 427-438.

Nix, Harold L., Ram N. Singh, and Paula L. Cheatham
1974 "Views of leader respondents compared with random respondents' views." Journal of the Community Development Society 5 (Spring): 81-91.

Office of Exploratory Research and Problem Asessment
1973 Citizen Participation in State Government: a Summary Report. Washington, D. C., National Science Foundation.

Osgood, Mary H., Joan S. Thomson, and Kenneth M. Martin
1977 "Citizens and officials' perceptions of local problems: are they the same?" University Park: Pennsylvania State University, Department of Agricultural Economics and Rural Sociology, Staff Paper Series.

Paulson, Belden and Don Folkman
1976 "A typology for interrelating university educational functions to community development." Journal of the Community Development Society 7 (Fall): 78-91.

Southern Community Resource Development Committee
1973 The People's Choice: An Approach for Involving Citizens in Community Decision Making. Blacksburg: Virginia Polytechnic Institute and State University, Extension Division, Publication 586.

Southern Rural Development Center
1977 Citizen Participation. Mississippi State: Rural Development Bibliography Series No. 6.

Tankersley, Howard
1976 "Some thoughts on citizen involvement in public decision making." Proceedings, Rural Sociology Section of the Southern Association of Agricultural Scientists Annual Meeting, Mobile Alabama.

University of Kentucky
1975 "Issues facing Kentucky." Lexington Cooperative Extension Service, College of Agriculture.

APPENDIX I

Heberlein's Functions and Forms of Public Involvement*

A. Functions of public involvement
   1. Giving and getting information
   2. Interaction with the public
   3. Assuring the public
   4. Ritualism - to meet formal and legal requirements

B. Forms of public involvement
   1. Public meetings - good for giving information but not for receiving
   2. Small group workshops - excellent for all form functions
   3. Presentations to established groups - good for giving information
   4. Ad Hoc committees - good for information exchange and excellent for interaction and assurance
   5. Advisory committees - good for information exchange and excellent for interaction and assurance
   6. Key contacts - excellent for all four functions
   7. Analysis of spontaneous mail response - good for information collection
   8. Solicit information via mail - excellent for giving information and good for assurance
   9. Questionnaires and groups - excellent for getting information
   10. Observing behavior - excellent for getting information
   11. Reports from key staff - good for getting information
   12. News releases and mass media - good for giving information
   13. Analysis of mass media - fair for getting information
   14. Day-to-day public contacts - good for information exchange, excellent for interaction

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*From Heberlein (1976:16-23)

Evaluation of the Effect of Cooperative Extention Service Educational Programs on Attitudes and Knowledge About Land Use Planning

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Land use planning and management of natural resources has been a topic of interest in the United States during the past several years. Some states have adopted wide-scale land use planning to address many of the problems of conflicting demands for land use which accompanied a rapid growth in population, technological developments, and the need of land for increased agricultural production. Arkansas has no state land use plan. There is authority for city and county planning, but it has not often been exercised.

Arkansas in recent years has had a rapidly growing population, increased manufacturing development, and an expanding recreational-tourism industry to compete for land uses with the dominant one of agricultural production. This makes the topic of land use planning of increasing importance to leaders in the state.

The Arkansas Cooperative Extension Service has conducted land use planning educational programs for leaders during the past few years. The education of county leaders in the organizational and operational processes of land use planning is one of the primary objectives of these programs. This objective was implemented by holding informational meetings in several districts of the state to which county leaders in the area were invited. Since land use planning is relatively new to many people in Arkansas it is important that county leaders be accurately informed and aware of the issues involved in land use planning. It is also important that they understand how land use planning programs can be implemented to meet the needs of area residents. These educational programs, then, have an important role in the dissemination of information, so that leaders will be effectively and accurately informed.

An evaluation of a Cooperative Extension Service land use planning educational meeting for leaders in one of the districts was conducted previously (Danforth and Voth, 1977). That design consisted of a participant and a control group. The participant group was tested on their attitudes and knowledge about land use planning immediately following the meeting, while the control group was sent a questionnaire by mail. Comparisons between the experimental and control groups found few significant differences. The differences found were in attitudes and not in knowledge. The major impact of the meeting seemed to be one of increasing favorability among participants toward land use planning in general, and toward regulation of agricultural land in particular.

Another means of exploring the effect of Cooperative Extension Service land use planning educational efforts was employed in the analysis of data collected in a 16 county survey of attitudes toward land use planning (Jackson, Danforth, Voth, and Hudson, in preparation, 1978). The percentage of the population in the 16 counties who were contacted by Cooperative Extension Service personnel regarding land use planning was correlated with the mean attitude in the counties toward several aspects of land use planning. This set of analyses showed the extent of Cooperative Extension Service educational effort to be positively related to favorability toward governmental regulation of land, toward safety and sanitation regulations, and toward governmental regulation to protect agricultural land. No relationship of Cooperative Extension Service educational effort to awareness of land use planning in the counties was found, however.

The results obtained from these two very different data sources and types of analysis are quite similar. Both show no increase of knowledge or awareness of land use planning associated with Cooperative Extension Service educational efforts. Both do show, however, a positive relationship to attitudes. In each set of analyses higher favorability toward land use planning or government regulation of land was found, as was a higher favorability toward regulation of agricultural land.

The implication of these results was discussed in the previous publication (Danforth and Voth, 1977). It was concluded that a more positive attitude toward land use planning needed to precede the acquisition of detailed information about it. The results also indicated, however, that leaders wanted the Cooperative Extension Service to take an active role in land use planning education, and that factual information about land use planning processes was wanted. That no knowledge increase occurred as a result of the program suggested that the Cooperative Extension Service should concentrate on this aspect of the programs.

The present evaluation was conducted to further analyze the impact of the Cooperative Extension Service educational land use planning program, and to replicate results of the previous research. This design is somewhat different from the one employed previously. Rather than random assignment to participant and control groups, which did not work well in practice (Danforth and Voth, 1977), two separate but matched groups were chosen; rather than one testing per group, the participant group was given both a pre and a post-test; and rather than testing the participant group immediately following the meeting, the test was given approximately two months following the meeting.

Based on previous results, one would expect program participation to result in more favorable attitudes regarding land use planning issues. Due to the nature of the program, one must also hypothesize an increase in knowledge about aspects of land use planning, even though this result was not found previously.

Methodology

Design

The quasi-experimental design provided for one group which would attend a meeting on land use planning, and another matched group of equal size that did not attend. Both groups were selected by county Cooperative Extension Service agents. The control group was not selected until after the program to be evaluated had been conducted. At that time these persons were selected to match as well as possible those who had attended the program. Characteristics considered for matching were community position, political office, occupation, etc.

Thus, there was no random selection, nor random assignment to groups.

The group attending the meeting was given a questionnaire to be completed at the beginning of the meeting. A second questionnaire was then developed and mailed to both groups after the meeting. Thus, the design provided for a pre and post-test for the participant group, and only one test for the control group. This is a slight variation of the design that Campbell and Stanley (1963) refer to as the nonequivalent control group design. We decided to use this design because the control group was selected after the participant group. This procedure allowed us to select a control group with similar characteristics to those of the participant group, thus making the groups more comparable.

Subjects

Of the adult leaders attending the meeting, 57 were included in the participant category of the research. The only criteria for selection were that the participant had completed the pre-test questionnaire and that a mailing address was available.

The county Cooperative Extension Service agents were then asked to review the list of meeting participants from their county, and prepare a second list of county leaders to be used for control purposes. As stated above, the control group subjects were matched with the participants on several characteristics. They were selected, when possible, in equal numbers from the same county as participants. These counties include Arkansas, Ashley, Bradley, Calhoun, Chicot, Cleveland, Dallas, Desha, Drew, Grant, Jefferson, Lincoln, Lonoke, and Pulaski.

Materials

The program was evaluated by self administered questionnaires. 1/ The pre-test questionnaire was designed to assess attitudes toward aspects of land use planning. The second, or post-test questionnaire, included not only this, but also examined knowledge of present Arkansas land use policies, and obtained information about the demographic characteristics of the participants, and the participants' evaluation of the program. The contents of the questions were taken from the Cooperative Extension Service program materials, land use planning materials developed by the Extension Committee on Organization and Policy, planning guidelines and materials prepared by the University of Arkansas Division of Community Affairs, and from a questionnaire designed by the staff of the University of Arkansas Department of Agricultural Economics and Rural Sociology to assess land use planning attitudes in Arkansas.

The attitudinal questions measured favorability toward land use planning in general, public versus private rights in land use control, preservation and control of agricultural land, and preservation and conservation of the environment. The factual items related to Arkansas land use policies, including some items which were assumed to be widely known, and others which were more technical in nature.

The questionnaire format consisted of a brief instruction page,

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1/ Copies of the questionnaires will be supplied by the authors upon request.

11 attitudinal items answered on a five-point Likert scale, 2 attitudinal questions of the multiple choice type, 7 factual questions answered as true-false-don't know, and demographic questions. In addition, for those attending the meeting, ratings of the program were requested. Those not attending the meeting were asked what types of information concerning land use planning would be of interest to them.

Procedure

The program to be evaluated was a meeting sponsored by the Cooperative Extension Service in conjunction with the University of Arkansas Department of Agricultural Economics and Rural Sociology, and the Division of Community Affairs of the University of Arkansas. The four hour meeting was held in Pine Bluff, Arkansas, on May 31, 1977, beginning at 4:00 P.M.

The first half of the meeting consisted of a discussion of "Land Resources Today--What are the Issues" by a panel of University of Arkansas faculty from the departments of law and sociology. This was followed by an open discussion period. Next was a slide presentation of land use planning issues which was accompanied by a prepared script. This was followed by a dinner.

The second half of the meeting consisted of panel presentations by a group from Crittenden County, Arkansas, on the development and administration of their county-wide land use planning program.

Pre-test questionnaires were distributed at the beginning of the meeting. Instructions were read by the moderator and anonymity was assured. The completed questionnaires were then left on the tables to be collected. Participants were informed of a follow-up questionnaire that would be mailed to them after the meeting.

On July, 25, 1977, mailing of this questionnaire was begun to both participants in the meeting and to the control group. To assure a high response rate from the mailed questionnaire a series of follow-ups to the initial mailing was conducted from the University of Arkansas using a method developed by James A. Christenson (1974). When the daily response rate dropped to less than one percent, a postcard reminder was sent for all non-returned questionnaires. When the daily response rate again dropped to one percent, a second copy of the questionnaire was sent. This process was continued through a third registered mailing of the questionnaire. Eighty-nine percent of the leaders attending the meeting responded to the mailing, while ninety percent of the control group responded. This data, along with the respective response rate per county, is presented in Table 1.

Insert Table 1 about here

Results

First the control or non-participant group was compared with the experimental group (post-test) in attitudes and knowledge about land use planning. Responses to 13 attitudinal items and 7 factual items were analyzed. There were a few significant differences. 2/ The participant group was less favorable toward state government responsibility in deciding controls for the use of land, more favorable toward county government responsibility, and less likely to think no government level should have responsibility (Table 2). On another attitudinal item there was also a significant difference in opinion; the participant group was more favorable than the control group toward controlling population growth in certain areas by limiting the number of new houses built or by other means (Table 3). Responses to only one factual item showed a significant difference between the groups; the experimental group was more likely than the control group to know that zoning can be used to protect agricultural activities from urban development (Table 4).

Insert Tables 2, 3, and 4 about here

Since each person in the control group had been chosen to match a person in the experimental group, a second set of analyses was done using the matched pairs. 3/ Similar results to the first analyses were obtained. Significant differences were again found in opinions about which governmental level should have responsibility for deciding controls on land use. The participants were more likely than their matched controls to favor county government; and less likely to favor state government or to think no government level should be involved (Table 2). The participants were also more likely to know that zoning can be used to protect agricultural activities (Table 4). The only difference in results between the two sets of analyses was the lack of a difference in opinion between the two matched groups on the question of controls on population growth.

Simple between-group tests had shown no significant differences in several characteristics of the control and experimental groups, including sex, land ownership, the use of their land, age, and education. Thus, the two groups, as a whole, seem fairly comparable. In order to assess how comparable the matched persons in the two groups were, other tests were performed. Correlations of characteristics of the matched persons were tested, as well as differences in characteristics of the matched persons. There was a significant correlation only of sex; and a significant difference in the use of their land. Thus, the matching procedure, while it did obtain a group similar to the participants overall, was apparently not very effective since pairwise tests are only more efficient when there are correlations in the paired values. This suggests that the first set of analyses presented, which did not take the matching into account, is a better test of differences. That similar attitudinal and knowledge differences were found when using tests with the matched pairs does, however, substantiate the results obtained.

From these results it appears that participation in the educational

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2/ For attitudinal items a *t*-test for differences in group means was performed. For factual items Chi Square tests of significance were performed.

3/ All tests of significance were performed using a *t*-test for matched pairs. In these tests, the "don't know" response to factual items was treated as a neutral, or midpoint category.

meeting resulted in a small amount of attitudinal and knowledge change. The nature of this change, however, is highly specific in topic.

Another test was conducted, however, to see if there were any differences in attitudes of the participants before and after the meeting. Factual items had not been asked in the pre-test, so responses were not available for comparison. There was a significant difference on two attitudinal items when responses before and after the meeting were compared. However, these two items were not the same items on which differences between the control and participant groups had been found. Therefore, these differences could not be concluded to be real effects of meeting participation. This would indicate no program effects. The result was substantiated when participant responses to the pre-test were compared with control group responses. There apparently were differences in opinion between the participant and control groups even before the meeting. The experimental group, before participating in the meeting, was less favorable than controls toward federal government responsibility, more favorable toward county government, and less likely to think no government level should be involved (Table 5). These are essentially the same differences found when the control group had been compared to the experimental group after participating in the meeting. The obvious conclusion, then, is that there are essentially no effects which can be attributed to meeting participation, but that there was an element of selectivity as to who attended the meeting.

Insert Table 5 about here

The lack of a meeting effect might be partially attributable to the fact that the post-test given to the participant group was not mailed until approximately two months after the meeting. In such a time span, the impact of the meeting might have lessened. Still, that no differences which could be attributed to the meeting were found after two months indicates the educational program did not have any long-lasting effects.

One other design problem might also be considered. The control group was tested at the same time as the participant post-test, rather than at the time of the pre-test. Therefore, the control group could have been in contact with the participant group following the meeting, effecting similar attitude changes. While this possibility cannot be discounted, it seems fairly unlikely, and it can probably be safely concluded that there were no meeting effects.

The participants were asked directly whether they had any change in attitude as a result of the meeting. A majority said they had not. Thirty-eight percent said they had. However, when asked about which topic their minds had changed, only nine people who had completed the pre-test responded. When participant's answers before and after the meeting were compared, there was some change in response on 8 of the 13 attitudinal items. However, the pattern of change was not consistent from item to item, and there were so few cases that no conclusions could be drawn.

Participants were also asked which topic of discussion in the meeting was most important to their needs or interests. Twenty-eight of the 51 participants responded. There was a variety of answers, making many of them hard to categorize. Two general categories, however, made up the choice of almost half of those responding. The use and protection of agricultural land and natural resources, such as timber and wilderness areas, was of most interest to 29 percent; and the level of government which should be responsible for land use planning, including the role of county level planning, was of most interest to 18 percent of respondents.

To further define what most interested the participants about the meeting, they were asked what part of the program gave them the most information. It will be recalled that the meeting had three distinct sections: a discussion by university faculty about humanistic aspects of land use planning issues; a slide presentation of land use planning issues; and a discussion of the development and operation of a functioning county planning board. As can be seen in Table 6, a majority felt the discussion of county planning to be most informative, with the faculty discussion of land use planning issues least informative.

Apparently, land use planning is considered an important topic among county leaders, since over three-quarters of both the participant and non-participant groups agreed it was an important issue for discussion in their counties.

Since the meeting did not appear to produce any significant changes in attitudes or knowledge concerning land use planning, it is of interest to examine what type of information is most desired by the leaders, and in what form. This question was asked of the control group. Table 7 shows the percentage interested in various types of information, and Table 8 shows the percentage preferring different forms of communicating the information. The largest number wanted information on present land use laws and policies in Arkansas, with a majority also wanting information on land use planning issues. A public meeting, such as that evaluated, was not a particularly popular form from which to receive information. Instead, newsletters were most preferred, and having information available at the Cooperative Extension Service office was the second most popular form of receiving land use planning information.

Insert Tables 6, 7, and 8 about here

Summary and Discussion

In this evaluation of a Cooperative Extension Service land use planning educational program, it was hypothesized that program participation would result in greater favorability toward aspects of land use planning, in particular toward land use planning as a process and toward government regulation to protect agricultural land. An increase in knowledge about land use planning processes was also hypothesized as a result of the meeting. However, no significant meeting effects were found.

These results do not substantiate those of a previous evaluation, where greater favorability was found, but no knowledge increase. One difference in design might partially account for the lack of effect found in this evaluation. While the previous evaluation employed a post-test for participants immediately following the meeting; in the present evaluation, participants were not questioned until approximately two months after the meeting. During such a time interval any effects of the program might have dissipated. This calls one to question the significant effects previously found. Since program effects were not found after a time interval of only two months, they are certainly not long-lasting enough to permit one to conclude any real effects which can be attributed to the meeting. Especially noticeable is the lack of effect on knowledge of participants in any evaluation of Cooperative Extension Service land use planning educational program conducted in this research project.

Another qualification that should be taken into consideration involves the battery of questions which were asked to measure attitude and knowledge change. The limits of respondent patience, particularly when self-administered questionnaires are used, preclude the use of long, detailed instruments. Consequently, there may be questions which could have been asked where significant program effects would have been registered. However, we do not know what those questions would be, and the questions used were chosen quite carefully to represent the potential cutting edge of attitudes and knowledge toward land use planning.

From these and previous results we conclude that the Cooperative Extension Service land use planning educational program has minimal, if any, effects on its participant leaders' knowledge or attitudes.

While significant effects can not be concluded, both program evaluations found a high interest among leaders in the topic of land use planning. Both evaluations also found that information about present land use laws and policies was of most interest to the leaders. In addition, these evaluations found that leaders wanted a more active role for the Cooperative Extension Service in land use planning education than merely having the information available upon request at the office. Newsletters seemed particularly popular as a form of receiving information. In both districts the program which was evaluated was essentially the same; and in both cases the part of the program which presented information on the actual development and operation of county planning most interested participants. Thus, leaders do appear to want information on land use planning from the Cooperative Extension Service.

The Cooperative Extension Service educational program on land use planning does not appear to be effective in giving leaders the information which they have expressed an interest in. This should make one question whether a public meeting is the best means for presenting such information, or whether another form, such as a newsletter, might be more effective. Also, one must question the meeting content or form. While information on land use issues seems to be of some interest to the leaders, they consistenly prefer information on land use planning operational processes, and on current land use policies. Perhaps future efforts should be changed to include more of this type of information. Only if the leaders understand how land use planning works, and how it can be applied to their area, will land use planning education have any practical importance. Perhaps some attention should also be given to the educational process itself to see that the meetings are more effective. One focus would be the systematic mechanisms of reinforcement that facilitate the learning process.

Two final points need to be made in conclusion. (1) Apparently selective participation plays an important role in the differences found in the previous research. Not surprisingly, people who agree with what will be presented at the meetings--or what they assume will be presented at the meetings--attend and others do not. Thus the meetings change no one's mind, and really don't influence anyone very much. They may merely reinforce pre-existing views. (2) Negative research results are by now very common in evaluation of social and educational programs--to the point that some have despaired of using experimental designs or any approximation of experimental designs to evaluate programs and have gone to "softer" methods. There are many things that go on in society, including some within the fields of education and adult education, which our conventional wisdom regards as eminently useful and effective, but which empirical research evidence does not support. Perhaps the recognition of this fact makes another case of negative research results somewhat more tolerable.

References

Campbell, D. T., & Stanley, J. C. Experimental and quasi-experimental designs for research. Chicago, Ill.: Rand-McNally & Co., 1963.

Christenson, J. A. A procedure for conducting mail surveys with the general public. Paper presented at the Annual Meeting of the Community Development Society, Wilmington, N.C., August, 1974.

Danforth, D. M., & Voth, D. E. "Evaluation of an educational program's impact on attitudes and knowledge related to land resource management," in Harsha N. Mookherjee (ed.), Rural Sociology in the South: 1977 (Proceedings of the Rural Sociology Section, Southern Association of Agricultural Scientists, Atlanta, Ga., February, 1977).

Jackson, V., Danforth, D. M., Voth, D. E., & Hudson, G. T. Attitudes toward planning and management of land resources in the state of Arkansas. In preparation for publication by the Arkansas Agricultural Experiment Station, University of Arkansas, Fayetteville, 1978.

Table 1. Response Rate per County to Mailed Questionnaires Among the Control and Participant Groups

County	Total sample Total contacted	 Percent returned	Participant group Total contacted	 Percent returned	Control group Total contacted	 Percent returned
Arkansas	8	100.0	4	100.0	4	100.0
Ashley	12	83.3	6	83.3	6	83.3
Bradley	8	87.0	4	75.0	4	100.0
Calhoun	6	83.0	4	75.0	2	100.0
Chicot	6	66.6	3	66.6	3	66.6
Cleveland	8	100.0	5	100.0	3	100.0
Dallas	10	90.0	5	100.0	5	80.0
Desha	6	100.0	3	100.0	3	100.0
Drew	10	90.0	5	100.0	5	80.0
Grant	8	100.0	4	100.0	4	100.0
Jefferson	6	66.6	3	33.3	3	100.0
Lincoln	9	88.8	4	75.0	5	100.0
Lonoke	8	87.0	4	100.0	4	75.0
Pulaski	6	100.0	3	100.0	3	100.0
Total	111	89.0	57	87.7	54	90.0

Table 2. Tests of Differences Between the Control and Post-test Participant Groups in Support for Government Levels to "have Responsibility in Deciding Controls on the Use of Land"

Government level	Percent support Participant group	 Control group	Group comparison t	 df	Matched pairs comparison t	 df
State	24	46	2.31*	96	-2.29*	41
County	76	40	-3.89**	96	4.58*	41
None	10	25	1.98*	96	-2.21*	41
N of cases	50	48				

* $p < .05$
** $p < .001$

Table 3. Test of Differences Between the Control and Post-test Participant Groups in Support for "Controls on Population Growth in Certain Areas by Limiting the Number of New Houses Built or by Other Means"

	Percentage distribution of responses						Group comparison		
Group	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N	Mean a/	t	df
Control	8.3	29.2	20.8	18.8	22.9	48	2.8	-2.01*	91.52
Participant	6.3	52.1	18.8	12.5	10.4	48	3.3		

* $p < .05$

a/ Means are based on a response scale where 1=strongly disagree and 5=strongly agree.

Table 4. Tests of Differences Between the Control and Post-test Participant Groups in the Knowledge that "Zoning can be used to Protect Agricultural Activities from Urban Development"

	Percentage distribution of responses				Group comparison		Matched pairs comparison		
Group	True	False	Don't know	N	Chi Square	df	Mean a/	t	df
Control	58.7	19.6	21.7	46	7.77*	2	.41	2.73**	40
Participant	84.0	6.0	5.2	50			.78		

* $p < .05$
** $p < .01$

a/ Means are based on a response scale where 1=true, 0=don't know, and -1=false.

Table 5. Test of Differences Between the Control and Pre-test Participant Groups in Support for Government Levels to "have Responsibility in Deciding Controls on the Use of Land"

	Percent support		Group comparison	
Government level	Control group	Participant group	t	df
Federal	23	8	1.94*	85
County	40	79	-4.04**	85
None	25	8	2.16*	85
N of cases	48	39		

* $p < .05$
** $p < .001$

Table 6. Percentage of the Participant Group Preferring Different Sections of the Meeting

Meeting section	Percentage distribution of responses
Faculty discussion	17
Slide presentation	30
County planning experiences	52
N of cases	46

Table 7. Percentages of the Control Group Expressing Interest in Different Types of Land Use Planning Information

Information type	Percentage
Present land use laws and policies in Arkansas	83
Land use planning issues	70
Where to obtain specialized information and help with land use planning	49
Present land use laws and policies in other states	34
N of cases	47

Table 8. Percentages of the Control Group Expressing Interest in Different Forms of Land Use Planning Information

Information form	Percentage
Newsletter	67
Information upon request at office	56
Public meeting	38
Television programs	18
N of cases	45

EXTENSION'S ROLE IN ENVIRONMENTAL QUALITY EDUCATION PROGRAMS*

by

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Background

As environmental problems relating to agriculture production have been pushed into the forefront of public issues, Cooperative Extension has been called upon to provide educational leadership in this critical area. Extension over the years has been a champion of the use of sound environmental practices, generally in line with farmer concerns.

It is felt that the roots of our present day environmental problems related to agriculture lie in the concept of the frontier challenge of the late 1800's, where nature was in many ways considered an adversary to be delt with (Glacken, 1970). It was a time of exploitation. There was always another field, river and forest (Oppenheimer and Miller, 1973; Moncrief, 1974).

At the turn of the century, agriculture moved away from subsistence farming and it was called upon to provide food for the increasing urban masses of the industrial revolution. Until recently, the primary goal of agriculture has been to increase production. Agricultural research with the development of new technology, has been carried out to achieve this goal. The end result has been that we have built the capability of producing surpluses in the United States. Over the past few years, agricultural research related to environmental problems is receiving attention.

About the beginning of the 1900's, near the end of the last frontier, a conservation movement began. The concept that was promulgated was that the present generation has an obligation to hand down natural resources to future generations (U. S. House of Representatives, 1968). Extension became closely associated with the movement that the Soil Conservation Service gave leadership to. This movement has been generally supported over the years by farmers.

The new environmental movement began in the late 1960's. Momentum began to build as people became aware and involved. Mass media provided much coverage and millions of Americans participated in major demonstrations, most notably, the dramatic Earth Day of April 22, 1970. Survival became a major public issue (Sewell and Foster, 1974). Undoubtedly, agriculture with the use of pesticides became one of the major culprits of environmental degradation.

Environmental law with accompanying rules and regulations is relatively new. In 1970, there was still no national legislative, administrative or judicial policy on environmental problems (Oppenheimer and Miller, 1973). Over the past several years many national, state and local rules and regulations have been made that affect agriculture.

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Problem

Experience in our state indicates that Extension faculty generally are not able to translate environmental quality concerns into educational programs. Very few county staff planned or reported any work in environmentally related areas. This is a real concern, especially in a state with such a high degree of environmental sensitivity and much public concern (Rackleff, 1972; McCluney, 1971). What are some of the possible reasons for such a low level of Extension activity?

One possible reason for low level of activity among Extension agents is that the whole area of environmental quality is so large that it is hard to get a programmatic handle on it. Frustrations are often expressed in terms of we know we should be doing something, but what and how?

A recent research report suggests that diffusion theory and research, to date, does not adequately explain the adoption of practices among farmers designed to protect the environment (Pampel and van Es, 1977:69):

> Current agricultural extension thinking also appears to favor voluntary compliance and educational effort to justify the position. However, whatever the merits of the argument, past experience with commercial innovations appear a poor predictor of, and therefore a poor justification for, success of voluntary compliance strategies in the area of environmental quality.

There are also possibilities of role conflicts of Extension faculty working with environmental quality issues. Because of strong family farm orientation and the closeness to the land and nature, farmers of the past have generally, to the best of their knowledge, used practices to protect the environment. In recent times, as farm size increases, farmer decision making has become more business oriented. Immediate economic considerations may overshadow environmental concerns. The problems of inflation with high production costs and low market prices has intensified this situation. Rural ideology associated with farm life of the past has become less important as farmers become more concerned with profits. Farming has become an occupation rather than a way of life (Rogers and Burdge, 1972).

As an advocator of certain environmental practices supported by governmental regulations and the tax paying urban populace, Extension could find itself in a very delicate situation; a proponent of sound environmental practices and at the same time defenders of agriculture and the rights of farmers. Klessig states that "state specialist and county staff must be responsible to the economic needs of their clientele. At the same time, they must be responsible for adult education relative to new social goals on water, air and solid wastes usually set at higher levels of government (Klessig, 1977:6)."

The recent rash of governmental regulations, the acuteness of public awareness brought on by the new environmental movement of the late 1960's and the crunch of rural-urban interface in rapidly urbanizing states have often placed Extension, a government agency itself, in a delicate position. Who does Extension represent in controversies between the farmer and public interests and between the farmer and industry? Even within rural areas there is a potential for conflict between the farmers and the new vociferous upper-middle income back-to-the-farm urbanites who do not have a utilitarian view of the land as the farmer does (Buttel and Flinn, 1977).

Purpose

The purpose of this paper is to suggest a framework to classify environmental practices to be used as a guide for Extension faculty in planning, carrying out and evaluating educational programs on environmental quality. The focus will be on pollution in agriculture. Potential Extension roles and implications for programming will be discussed.

Guide for Extension Environmental Programming

Classification Framework

To understand Extension's educational role in the area of environmental concerns, it is suggested that each practice be assessed individually. A four-way classification has been developed as a way to organize environmental practices which will serve as a guide to determining the nature of educational programs. The categories are based on whether or not the practice is under governmental regulation and the relative economic considerations. Where a certain practice is placed within this quadrant system has implications for Extension programming (see Figure 1).

	Regulated	Unregulated
Negative Economic Return	I	II
Positive Economic Return	III	IV

Figure 1
Classification of Environmental Practices

Practice Characteristics by Quadrant

Quadrant I -	These practices are regulated by state and/or federal government and provide no economic return. In fact, these practices may cost the farmer a great deal.
Quadrant II -	Environmental practices that fall in this quadrant are unregulated with little or no known economic return. Most recognized environmental practices would fall in this area.
Quadrant III -	This is more or less a ghost cell in that there are no known practices that are regulated by law and provide a positive economic return.
Quadrant IV -	This is the cell that provides the most fertile ground for aggressive Extension educational programming. Practices are unregulated, but most importantly, provide some positive economic return.

This is intended to be a dynamic classification, in that under a change in conditions a particular practice may move from one quadrant to another. There are three major reasons for shifts of a practice to a different quadrant. They are caused by changes in law, economic situations and research. Any shift would have implications for Extension programs.

Laws relating to environmental practices are a relatively new phenomena. Rules and regulations based on laws are being passed on a continual basis and affect the adoption of certain environmental practices in agriculture. As a certain practice in quadrant II comes under Federal, state or local regulations it would move from quadrant II to quadrant I.

As economic conditions change, a practice might shift from quadrant II to quadrant IV. As energy costs increase, it will become more advantageous to apply energy saving technology. Economic shifts may be caused by overall changes in the economy or by specific economic measures such as taxation designed to encourage a certain practice. There are instances where the government will subsidize certain practices on a cost-share basis. This would tend to move a certain practice from quadrant II to quadrant IV.

Research is another way to move a practice from quadrant II to quadrant IV. There are many practices that no one is sure if they are economical. If research and demonstration were to show that a particular practice is economical, then it would move to quadrant IV.

It is the authors' opinion that contrary to the recent research cited earlier, diffusion theory is fully operative in quadrants II and IV. Present theory does adequately explain the adoption of practices designed to protect the environment. An understanding of the theory would help an Extension agent develop an educational program dealing with environmental issues. Among the major concepts of diffusion theory that apply are characteristics of innovations, adopter categories and the innovation-decision process (Rogers and Burdge, 1972).

Potential Extension Roles

Once a practice has been placed into one of the quadrants, decisions can be made as to the most appropriate role of Extension in environmental education programming. Determinations need to be made as to whether programs should be developed to adjust to change or direct change and whether they should be promotional, aggressive or low-key, responding only to requests. The following is a list of potential roles of Extension educators in environmental education:

1. Teach knowledge and skills to farmers who must comply with governmental regulations. This type of educational program would be designed to help people adapt to change.
2. Direct aggressive educational programs designed to direct change.
3. Provide forums for building broad base community understanding of environmental problems. It is Extension's responsibility to be sure that all sides of an issue are presented.
4. Respond to requests from individual farmers who seek solutions to environmental related problems. This would be more or less of a consultant type role.
5. Demonstrate economic advantage of practices.

Implications for Extension Programming

For practices in quadrant I and theoretically in quadrant III there is really no adoption decision on the part of the farmer. Federal, state and local regulations require individuals to adopt certain practices. Extension's role is to help farmers understand the laws and teach them skills and knowledge to be able to comply with the laws. An example would be the pesticide applicators certification program. By law, farmers are required to receive some training in the safe handling and use of pesticides in order to purchase restricted pesticides. Extension, in a purely educational role, provided a vehicle for such training through a series of classes dealing with safe pesticide use.

This paper argues that current diffusion theory is fully operative in quadrants II and IV in terms of voluntary adoption of practices designed to improve environmental quality.

Quadrant II, where practices are unregulated and there is little or no known economic return, offers a potential in certain circumstances for role conflict of Extension faculty. Extension must maintain good rapport with their agricultural clientele, but they also must respond to the larger community. Extension's role should be that of providing open public forums to present all sides of controversial issues. The immediate economic plight of the farmers must be made known as well as the long range detrimental effects on the environment of the continued use of certain practices. A point is made that to raise the levels of information and social concern, the process of bargaining and accommodation can take place (Caldwell, 1973).

The legal system is a mechanism for making social choices of environmental quality. In the new view of the legal process of the complementary nature of legal and economic concepts, environmental issues are to be decided by measuring social and private benefits and costs (Loehman and Conner, 1974; Sax, 1970). Extension has a role to see that all public and private interests are properly considered. When needed for legal decision making, Extension must bring technical knowledge to bear on the problem.

As was mentioned earlier, many of the unregulated practices are in quadrant II because their economic return is unknown. Research and demonstration work that would point to a positive economic return would move the practice from quadrant II to quadrant IV. Extension should give leadership to any such demonstration work.

Practices that fall in quadrant IV have the most potential for aggressive Extension educational programming. In terms of voluntary adoption of new environmental practices, diffusion theory becomes fully operative and can guide Extension agents as they make programmatic decisions. In contrast to quadrant II, quadrant IV, as part of relative advantage of the new practice, the economic return is positive. Other major characteristics of quadrant IV environmental practices such as compatibility, complexity, trialability, and observability, should be considered to help understand the rate of adoption of a particular practice (Rogers and Burdge, 1972).

Summary

Extension has been called upon to provide educational leadership in the area of environmental concerns. Over the years, Extension has been a champion of sound conservation practices, generally in line with farmer sentiments.

County Extension faculty seem to have difficulty translating environmental concerns into educational programs. Perceived role conflict could be a problem. It seems, more importantly, that agents are overwhelmed by the vastness of the problems and are not able to get programmatic handles on the issues.

This paper provides a classification of environmental practices to be used as a guide in developing Extension programs. Potential roles of Extension have been discussed as well as implications for developing educational programs.

References

Buttel, Frederick H. and William L. Flinn
1977 "Conceptions of rural life and environmental concern." Rural Sociology 42 (Winter).

Caldwell, Lynton K.
1973 "Environment and the shaping of civilization." in Michael Micklin (ed.), Population, Environment and Social Organization. Hinsdale: The Dryden Press.

Glacken, Clarence J.
1970 "Man against nature: an outmoded concept." The Environmental Crisis. Harold W. Helfrich, Jr. (ed.), New Haven: Yale University Press.

Klessig, Lowell L.
1977 "Open marriage: community development and environmental management." Journal of Extension (Sept/Oct).

Loehman, Edna and J. Richard Conner
1974 Economics and Decision Making for Environmental Quality. Gainesville: The University Press of Florida.

McCluney, W. Ross (ed.)
1971 The Environmental Destruction of South Florida. Coral Gables: University of Miami Press.

Moncrief, Lewis W.
1974 "The cultural basis for our environmental crisis." Human Behavior and the Environment. John H. Sims and Duane D. Baurman (eds.), Chicago: Maaroufa Press, Inc.

Oppenheimer, Jack C. and Leonard A. Miller
1973 "Environmental problems and legislative response." in Michael Micklin (ed.), Population, Environment and Social Organization. Hinsdale: The Dryden Press.

Pampel, Fred, Jr. and J. C. van Es
1977 "Environmental quality and issues of adoption research." Rural Sociology 42 (Spring).

Rackleff, Robert B.
1972 Close to Crisis: Florida's Environmental Problems. Tallahassee: New Issues Press, Inc.

Rogers, E. M. and Rabel J. Burdge
1972 Social Change in Rural Societies. New York: Appleton-Century-Crofts.

Sax, Joseph L.
1970 "The search for environmental quality: the role of the courts." The Environmental Crisis. Harold W. Helfrich, Jr. (ed.) New Haven: Yale University Press.

Sewell, W. R. Derrick and Harold D. Foster
1974 "Environmental revival: promise or performance." Environmental Quality. W. R. Derrick Sewell (ed.), Beverly Hills: Sage Publications.

U. S. House of Representatives, Committee on Science and Astronautics
1968 "Managing the Environment: Report of the Subcommittee on Science, Research and Development." Washington, D. C.: Government Printing Office.

Section N

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"How the Rural Poor Choose Agency Services: Communication and Transportation as Factors in the Decision Making Process." Marguerite R. Howie and Kathleen Hanna, South Carolina State College.

"Killing Society with the Right to Die." H. Wayne Hogan, Loyola University.

HOW THE RURAL POOR CHOOSE AGENCY SERVICES: COMMUNICATION AND TRANSPORTATION AS FACTORS IN THE DECISION MAKING PROCESS*

Marguerite R. Howie — Kathleen Hanna

One of the most persistent and energy-consuming controversies around agency service delivery is the question of "deservingness," i.e., whether people who deserve them are actually receiving them or whether the people receiving them actually deserve them. "Able-bodied men on welfare" and "hungry children in the midst of plenty" are themes which echo and re-echo from the political right and left in letters to the editor, the mass media, and governmental studies. In this context, sociological studies seem to be focused either on the agency or on the client, and this approach often leads to subtle assignment of responsibility to the agency or the client, or exoneration from responsibility. This kind of effort seems to us less productive than a focus on the interaction among the client, the agency, and the agency's funding/accountability structure.

While a number of articles have been written covering the adoption of new farming and health practices by various strata of rural people (Gross, 1949; Coleman, 1951; Gross, et al., 1952; Belcher, 1958; Fliegal, 1960; Wilkening, 1962; Conklin and Hardy, 1964; Stuart, 1972), these studies are not particularly relevant to the question at hand, namely, what motivates the rural poor to take advantage of existing services. Either the authors did not check for class differential, or, if they did, they concluded that the less educated, the poor and the isolated tend not to use existing services, while the better educated, wealthier and socially participating tend to use them. A body of theoretical literature on the diffusion of social change is abundant (for example, Lionberger, 1960; Rogers, 1962; Leagans and Loomis, 1971; Rogers, 1971), but techniques, experimental evidence, behavioral measures and specific hypotheses seem strangely absent.

Some tangential consideration is given to changing the poor by Fliegel, 1960; Alleger, 1962; Marris and Rein, 1967; Bryan and Bertrand, 1970; Hazen and Cordes, 1947; and delivery systems are spottily treated in the literature with Carruthers and Urquhart contending that "the distance from the origin of need to the point(s) from which the associated service emanates definitely will influence its utilization."[1] Although they recognize that "other important influences involve the institutional characteristics of the community in which the service is rendered, transportation and communication systems, etc."[2] the role of these last two factors in directed social change remains largely unexplored.

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Peripheral consideration is given to agency utilization via research on rural poverty (O'Reilly, 1968; Crecink and Steptoe, 1970; McEleveen, 1971; Thomas, 1972; Briggs, 1974), quality of life (Lidstrom, 1961; Haddox, 1965; Boyd and Morgan, 1966; McCoy, 1974; McLean, 1974; Steelman, 1974; Workshop on Improved Rural Living on Limited Resources, 1974), the politics of poverty (Ford, 1973), and widespread nutrition research (Lantis, 1962; Arizona Department of Welfare, 1972; De Chavez, 1972; Green, et al., 1974) including numerous ongoing district, county, state, regional and national projects.[3]

However, the literature does not reveal any studies which have addressed themselves to the effect communication and/or transportation may have on the utilization of agency services by the rural poor. Moreover, if these intervening variables are not proven to be causal factors determining the extent of agency usage by a major sector of the population which agencies are designed to serve, what then are probable factors affecting the utilization of agency services by the rural, limited-resource community?

Our efforts to alleviate this void to some degree began in 1970. In a survey administered by South Carolina State College faculty members, Marguerite R. Howie and Ruby C. Sulton, in collaboration with the Orangeburg County Consumer Health Council, it was found that half of a random sample of families in eight rural communities in Orangeburg County reported receiving less than the poverty-level income of $3,000. Nevertheless, only 5 percent of those families interviewed reported receiving welfare assistance and only 15 percent reported that they received food stamps.

In 1972, Marguerite Howie and interested students presented these findings to agency personnel in the area, and during their interviews with them, they readily agreed that many clients fail to receive services for which they are eligible because they do not apply for them. They were asked why they thought this to be the case, and the interviewers repeatedly heard two explanations. First, they said, people do not come to the agencies because they do not know about the services that are offered, and second, they said, the people have no transportation.

In 1973, we obtained a CSRS grant to test these hypotheses, on a project entitled, "The Effects of Communication and Transportation on the Utilization of Agency Services by Rural Poor People in South Carolina." The research had two basic components: an experimental design and an interview design.

The experimental plan was a modified panel design with three experimental treatment variables: communication, transportation, and a combination of the two. Three towns of comparable population were selected: Bowman, Elloree, and North, South Carolina. To avoid contamination, none of the towns was closer than thirty miles to the other towns to be researched, and kinship patterns between towns were checked. The distance of thirty miles is sufficient to discourage friendships among people who lack transportation, and kinship ties tend to run between adjacent towns: none of these towns is adjacent to the other.

We defined communication for purposes of this research as the imparting of information. Operationally, communication was defined as a series of videotapes which we filmed covering such agency services as Food Stamps, Farmer's Home Administration, Vocational Rehabilitation, Health Department, Adult Education, and Employment Security Commission. The agencies themselves assisted in writing the videotape scripts, and agency personnel were introduced on the tapes, where they presented information on how to obtain the services offered by their agency. These films were then shown in rural churches and community centers.

In addition we secured pamphlets from the agencies and in some instances, when the pamphlets were too sophisticated, we developed charts, cartoons, and question and answer handouts for persons to take home to read and to share with others.

Operationally, transportation was defined as the provision of mini-bus services between conveniently situated pick-up stations in the towns and agency centers. (In many cases, the agencies are located as far as thirty miles from the people they serve.)

In Bowman we offered communication only, in Elloree we offered transportation only, and in North we offered both communication and transportation. In the remaining towns in Orangeburg County we did nothing. Before and after the application we tallied the number of persons who came to the agencies from the various towns in the county. If the hypothesis were correct that people do not use agencies because they are not knowledgeable or do not have transportation, then we should expect to see some increase in agency use from towns where we offered videotape showings or transportation, more in the town where we offered both, and little or none in the town where we did nothing.

The interview was taken among a random stratified block sample in the towns where the videotapes were being shown. The schedule included such questions as "Have you ever heard of this agency before?" "Did you ever try to get this service and were turned down or unable to take advantage of it?" "If 'yes,' would you tell us something about that?" Or, "What does your family receive regularly from Social Security, Welfare, Veterans, and/or Food Stamps?"

Our conclusions are drawn both from our research findings on this project and from follow-up interviews in the community with agency personnel, community action persons, ministers, and clients.

Communication

Our prediction that use of agency services would be significantly affected by imparting information to the rural community was not supported by the data. What happened was that with few exceptions agency use increased dramatically from 1973 to 1975, but the increase happened uniformly in towns where we applied the experimental treatment and in the control group towns, for four of the five agencies we were able to study (the statistics for Farmer's Home Administration had to be discarded due to insufficient retrieval techniques within the agency.)

In order to ascertain, therefore, whether or not we had any impact in the towns where we offered communication and/or transportation, we had to find out whether there was a significantly greater increase in the use of agency services by people in the non-experimental towns. The only agency whose utilization rates seemed to have been affected by communication was Employment Security Commission. Those whose rates increased uniformly with or without communication were Vocational Rehabilitation, Adult Education, Health Services, and Food Stamps.

How can we explain these data? What do Vocational Rehabilitation, Adult Education and Food Stamps have in common which is different from Employment Security Commission? One observation is that of the first four all except Food Stamps had an "expansion factor." Rehabilitation counselors could be assigned larger case loads. Adult Education classes could be made larger. Nurses could work more clinics and see more people per clinic, all without noticeable budget increases. Food Stamps and Employment Security Commission make direct payment or equivalent to their clients and therefore, have no such "expansion factor." A statistical artifact, the result of pruning of the Food Stamp rolls in Elloree, may make Food Stamps an exception to this analysis, i.e., more research might indicate that Food Stamps and Employment Security Commission (and other agencies which make direct subsidies to clients) have a different dynamic from those which offer services.

From the above observation, we may construct the following vignette: 1973 to 1975 saw an economic recession of rather severe proportions. Large numbers of people were out of work and applied for unemployment compensation. The resources were not available to serve these applicants, however, and rather than turn down large numbers of persons, the agency simply tightened its regulations until potential clients became discouraged and decided not to persist. People from towns where we showed videotapes had been alerted to the procedures of agency operation and by asserting themselves with their new knowledge, obtained the service. We did not see this effect on Food Stamps because we measured changes in the number of applicants only and were not able to get figures on the number of successful applicants, i.e., persons who actually received Food Stamps.

Obviously this explanation is a reconstruction of the data. More evidence would have to be adduced demonstrating that the increase was actually composed of persons who saw the films and/or their friends and relatives. Furthermore, it would have to be demonstrated that agencies, rather than saying no to potential clients, tighten their regulations, making their services harder to secure during times when their own resources are scarce. If these two facts could be established, a clearer picture of client-agency interaction would emerge.

Transportation

In no case did transportation, by itself, have a significant effect on agency utilization. That is, for the town of Elloree, where transportation only was offered, agency utilization did not increase significantly more than in towns where no treatment was offered.

In a follow-up situation, several agency and community action persons suggested to us that the transportation was not offered for a long enough duration to have impact in the community. The transportation phase of the project lasted 24 weeks, and it may be that this was insufficient time for the channels of communication in the rural community to "spread the word" that the service was available. There is some evidence that time was a factor, since the last three weeks of the transportation phase the mini-bus approached its maximum carrying capacity (12 per trip)*. On the other hand, the driver was instructed to give the people three weeks notice that the service would be discontinued, and it may be that this notice caused something of a scramble to get to the agencies before the bus service stopped.

Another possibility is that transportation is an interactive variable, that rural people do not use agency service partially because they have no transportation, but that other factors have a greater weight.

Tentatively we may propose that although communication and transportation are essential to the use of agency service by the rural, limited-resource community, they are not, of themselves, sufficient to make persons decide to risk the uncertainties of a new situation and the threat of self-disclosure. We would suggest that there are three other important variables which affect the decision of a rural family or individual to seek out the services of a community agency: we identify them as a) intensity of need, b) agency reputation, and c) community norms regarding agency use. All three of these factors should be explored empirically.

Need

Often during the interviews persons would report that they had heard of a particular service. When asked if they were currently using it, the majority who said no said that they were not using it because they did not need it. Need, however, is a relative term in at least two senses. The first sense is a dimension of relative severity, i.e., the difference between actual, or absolute deprivation and perceived deprivation (Moland, 1972; Rushing, 1972). What may appear to the sociological investigator as extreme need may be defined by persons who live in the area as relative comfort. To know what is considered need, one must know to whom the persons in question are comparing themselves.

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*This observation holds true only for Elloree, however.

A second dimension of need is that of relative definition - whether an absence is considered to be a need depends on the definitions of needs and lacks in the community itself. For example, in our research, we planned to present six agencies, as cited above. When we talked to the people in the churches, we found less concern with Vocational Rehabilitation than with sickle cell anemia, less interest in Farmer's Home Administration than in what to do about contaminated drinking water. When we prepared films on these subjects they were met with interest and high attendance, and the people would often stay to see the other films.

We might conclude from this analysis that one way to increase agency use, then, would be to cause people to redefine the parameters of need for themselves. Some support for this idea is found in the fact that one salient feature of this research is that it was conducted over a period of worsening recession and probably accounts for a large amount of the difference in rates of agency use from 1973 to 1975, even in towns where transportation and information remained constant.

Agency Reputation

Agency reputation is a factor which emerged from our interaction with a task force in which we participated for the Lower Savannah Council Regional Aging Program. This task force was composed of community action persons, clients, representatives of county and state-based agencies, lay persons, and persons who held positions of leadership in the community. As we participated in the deliberations, it became clear that there was a credibility differential between the county and state-based agencies and the community action program agencies. The latter, although they possessed fewer resources and less formal training of their staff had greater credibility than the former, even though the county and state-based agencies had more stability, more available resources and better trained personnel.

Assuming that this observation is generalizable, i.e., that we were not observing some atypical phenomenon, we would suggest that community action program agencies may enlist the loyalty of their clients by not treating them in a condescending manner, and that they do not raise the expectations of the community beyond that which they can actually deliver.

More research needs to be done on this factor before it can be incorporated into a theoretical framework for sociologists to use in the study of the decision by potential clients to seek or not to seek an agency's services.

Community Norms

Our follow-up interviews revealed community norms around agency use, norms which are shared by the rural, limited-resource community and agency personnel alike. For example, we learned that whites do not, as a rule, use agency services that are used by blacks even when they qualify for them. One obvious conclusion is that whites do not use the services because they dislike associating with blacks both as agency personnel and as fellow-clients. Our unstructured, follow-up interview material suggest two alternate hypotheses. First, rural, low-income whites do not tend to belong to any organizations, including churches: they are likely to avoid all social situations outside the extended family whenever possible. Going to the agency is a social experience, and if the normative structure is such that interacting with persons outside the immediate extended family is strongly discouraged, then these norms would govern the use of the agency except for persons who had no family, or no family in the geographic area.

Second, we have some evidence that whites who do use agency services such as the Health Department and Food Stamps receive more negative sanctions from white agency personnel than do black clients. We would suggest that white agency personnel may be delivering some non-verbal messages to white clients which say, in effect, "You don't belong here. You're one of us and we don't use these services." In other words, the white client may risk, and even experience, more loss of self-esteem at the hands of the predominantly white-staffed agency than the black client. In terms of loss of status, and attachment of stigma, the white client has more to lose than the black client, and this risk may be a powerful influence on his decision to seek and use agency services which he needs or for which he is eligible.

Other norms could be identified and should be sought by researchers in the area of delivery systems in rural areas.

Conclusions and Projections for Further Research

As systematic variable design research carried out among the rural poor for the purpose of exploring factors in agency utilization, this study represents a "first" in rural sociology. Therefore, the results cannot be compared with a body of existing literature, and all statements of conclusions should be evaluated in light of this fact.

None of the hypotheses formulated initially was confirmed. In some cases, communication produced significant effects and was hypothesized as an interactive variable with economic and social factors. The effect of transportation was negligible, partially due to large across the board agency utilization increases which may have obscured the research design. Given the nature of the study, in-depth interviews and comparison of individual cases, the research data were confined to nominal and ordinal statistical analysis: thus, we lost the advantage of the more sophisticated techniques of analysis of variance and covariance.

Little is known about the underlying factors in decision-making by the rural, limited-resource community. Even less is known about the factors affecting interaction between agency and client and the effect of that interaction on the utilization of the agency as a community resource. Replication and companion studies should be conducted to challenge or validate this study.

Footnotes

[1] Carrey Carruthers, and N. Scott Urquhart, "Some Methodological Considerations for Rural Community Services Research: A Report from W-114," paper presented at the National Workshop of Delivery of Community Services in Rural Areas, Lincoln, Neb., 14 December 1971 (Mimeographed), p. 9.

[2] Ibid.

[3] See "Rural Development Research at Land-Grant Institutions in the South," prepared by the Southern Rural Development Center, Mississippi State, Miss., 1974, Matrix 2.03 passim and Charles O. Crawford, "Some Relevant Concerns and Issues in Research on Personal Health Delivery System with Special Emphasis on Nonmetropolitan Areas," paper presented at the National Workshop on Delivery of Community Services in Rural Areas, Lincoln, Neb., 15 December 1971 (Mimeographed), pp. 4-5.

REFERENCES

Alleger, Daniel E. "Anomie: A Basis for Interpreting Attitudes in Low-Income Rural Areas." Paper presented at Agricultural Economics Section of the Association of Southern Agricultural Workers, 1962.

Arizona Department of Health, Nutrition Section. Model for a Nutrition Program for the Elderly. Phoenix, Ariz.; Arizona Department of Welfare, Division on Aging, 1972.

Belcher, John. "Acceptance of the Salk Polio Vaccine." Rural Sociology 23 (Summer 1958).

Boyd, Virlyn A. and Morgan, Carolyn A. "Synthesis of Findings From Southern Regional Research Project, S-44: Factors in the Adjustment of Families and Individuals in Low-Income Rural Areas in the South" prepared for OEO, DC, AE 290, Agricultural Experiment Station, Clemson University, Clemson, S.C. (March 1966).

Briggs, Vernon M., Jr. Chicanos and Rural Poverty. Baltimore, Md.: John Hopkins University Press, 1974.

Bryan, C. H., and Bertrand, A. L. "Propensity for Change Among the Rural Poor in the Mississippi Delta: A Study of the Roots of Social Mobility," USDA Agricultural Economics Report 185 (June 1970): 1-22.

Carruthers, Garrey, and Urquhart, N. Scott. "Some Methodological Considerations for Rural Community Services Research: A Report from W-114." Paper presented at the National Workshop on Delivery of Community Services in Rural Areas, Las Crucas, N.M. 14 December 1971 (Mimeographed).

Coleman, A. Lee. "Differential Contact with Extension Work in a New York Rural Community." Rural Sociology 16 (Fall 1951).

Conklin, H. E., and Hardy, E. E. Agricultural Regions of New York State Economic Land Classification. Ithaca, N.Y.: New York State College of Agriculture, Leaflet 8, 1964.

Crawford, Charles O. "Some Relevant Concerns and Issues in Research on Personal Delivery Systems with Special Emphasis on Nonmetropolitan Areas." Paper presented at the National Workshop on Delivery of Community Services in Rural Areas, Lincoln, Neb. 15 December 1971, 4-5. (Mimeographed).

Crecink, John C., and Steptoe, Roosevelt. Human Resources in the Rural Mississippi Delta. . . With Emphasis on the Poor. Washington, D.C.: United States Department of Agriculture, Economic Research, 1970.

De Chevez, Mirian Munoz. "Improving Nutrition in Less Developed Areas." Journal of Nutrition Education 4 (Fall 1972): 167-196.

Fliegel, Frederick. "Obstacles to Change for the Low-Income Farmer." Rural Sociology 25 (Winter 1960): 347-351.

Ford, Arthur M. Political Economics of Rural Poverty in the Rural South. Cambridge, Mass.: Ballinger Publishing Co., 1973.

Green, L. W.; Wang, Y. L.; and Ephross, P. H. "A Three-Year Longitudinal Study of the Impact of Nutrition Aides on the Knowledge, Attitudes and Practices of Rural Poor Homemakers." American Journal of Public Health 64 (July 1974): 722-724.

Gross, Neal. "The Differential Characteristics of Acceptors and Nonacceptors of an Approved Agricultural Technological Practice." Rural Sociology 14 (Summer 1949).

Gross, Neal, and Taves, Marvin J. "Characteristics Associated with Acceptance of Recommended Farm Practices." Rural Sociology 17 (Fall-Winter 1952).

Haddox, Benjamin E. "Joint Decision-Making and Related Factors Among Low-Income Rural Families." Southern Cooperatives Series Bulletin 109 (December 1965): 333-339.

Hazen, M. and Cordes, S. "Changing the Poor or Changing the System? A Basic Issue in Improving the Poor's Use of Medical Services." Bulletin. Agricultural Experiment Station, Pennsylvania State University, University Park, Pa. 113 (November 1974): 1-15.

Lantis, M. "The Child Consumer: Cultural Factors Influencing His Food Choices." Journal of Home Economics 54 (May 1962): 370-375.

Leagens, J. Paul, and Loomis, C. P. (Eds.) Behavioral Change in Agriculture: Concepts and Strategies for Influencing Transition. Ithaca, N.Y.: Cornell University Press, 1971.

Lidstrom, David E. "Interest Group Relations and Functions in Rural Society." Rural Sociology 26 (Fall 1961): 252-265.

Lionberger, Herbert F. Adoption of New Ideas and Practices. Ames, Iowa: Iowa State University Press, 1960.

Marris, Peter, and Rein, Martin. Dilemmas of Social Reform. New York: Atherton Press, 1967.

McCoy, John L. "Factors Associated with Levels of Living in Washington County, Mississippi." Washington, D.C.: United States Department of Agriculture, 1974.

McElveen, Jackson Vahl, and Dillman, Buddy L. A Profile of the Rural Poor in the Coastal Plain of Northeastern South Carolina. Washington, D.C.: U. S. Government Printing Office, 1971.

McLean, Edward L. "County 'Knowledgeables' Opinion of Change in the Quality of Life in Twenty-Six Southern Counties, 1960-1972." Southern Regional Research Project, S-79. (Mimeographed).

Moland, John. Rural Community Problems as Perceived by Leaders and Non-Leaders. Baton Rouge, La.: Southern University, Center for Social Research, 1972.

O'Reilly, Charles Terrance. Locked in Poverty: The Low-Income Rural Family in Dane County, Wisconsin. Madison, Wis.: University of Wisconsin, 1968.

Rogers, Everett M. Diffusion of Innovations. New York: The Free Press of Glencoe, 1962.

__________ . Social Change in Rural Society. New York: Appleton-Century-Crofts. 1971.

Rushing, William. Class, Culture and Alienation. Boston, Mass: D. C. Heath and Co., 1972.

Steelman, Virginia Purtle. " 'Knowledgeables' Opinions of Changes in the Quality of Life in Twenty-Six Counties, 1960-1972." Southern Regional Research Project, S-79. (Mimeographed).

Stuart, Bruce. "Equity and Medicaid." Journal of Human Resources 7 (Spring 1972): 162-178).

Thomas, George Roger. Poverty in the Nonmetropolitan South: A Causal Analysis. Lexington, Mass.: Lexington Books, 1972.

"Workshop on Improved Rural Living on Limited Resources." June 24-27, 1974.

KILLING SOCIETY WITH THE RIGHT TO DIE

H. Wayne Hogan*

As social science reminds us, human societies are formed and sustained by the exchange of responsibilities, one individual to another, with each person owing his/her moment-to-moment humanness to the sharing of socially mandated gifts, favors, pleasantries, and other culturally-defined obligations.[1] Failure to reciprocally fulfill such expectations seriously threatens the health of the entire social fabric, with mental illness and warfare respectively illustrating the disruptions that can occur at the individual and cultural poles of the "responsibilities" continuum.

Social responsibility, though, as is said of charity, begins "at home," i.e., with individual awareness of and response to one's own fads, foibles, and falsehoods--the continuing secular confession, as it were, of the indivual's social "sins."[2] But just as the social contract is abrogated by the individual's "bad faith,"[3] so the social covenant is also violated when the society makes it normatively permissible for the individual to discontinue fulfilling his/her responsibilities as a human, social being. Hence, for example, the otherwise humanely motivated societal context in which poverty and crime may unendingly beget poverty and crime in such an institutionalized manner that all concerned--the individual and the state--come to see the conditions as ones for which nobody and nothing is culpable. Positively reinforced by well-meaning liberal humanism, they become simply an unquestionalbe it-just-is. Szasz[4] and others critical of our present Mental Health Industry similarly see societies increasingly encouraging individuals to cease self-monitoring of their mentally abnormal proclivities in favor of letting the state both define and treat the various pathologies with which, so the "moral entrepreneurs" would have us believe, we are periodically overtaken. In like fashion, the chain of individual responsibility is further weakened by our being collectively encouraged to purchase no-fault car insurance and take advantage (again perhaps ideally through some sort of insurance program) of no-fault divorce, no-fault pregnancy, no-fault rape, and so on. One hopeful exception-to-the-rule is the current beginnings of the requirement of greater individual and community responsibility for self-protection from potentially criminal predators, thus acknowledging the impossibility of providing the amount of personalized police protection demanded by increasingly sophisticated societies. What has yet to be acknowledged, however, is the related realization that apart from the problems inherent in the purely logistical aspect of massive policing, the ultimate source of protection (and, unfortunately, of paradoxically intolerable anarchy) resides precisely in each person being the watchman of his/her own self.

Severance of the humanness-defining bonds of responsibility is additionally illustrated by the increasing avaliability and use of medicinal and other types of drugs and cosmetics. We thus routinely ingest one kind of chemical agent foreign to our biological makeup in order to relieve tension, another kind to make us more tense, one kind to make us happy, another to relieve the agonies of the mildest headache, another potion to make us sleepy and still another to keep us awake. We are further protected from experiential unkindnesses by taking care not to publicly present ourselves without benefit of name-brand underarm deoderants, mouth washes, hair sprays, foot powder, and multi-colored sunglasses.[5] In the Cosmetics Age, we therefore make it not only permissible but desirable (hence, in effect, socially mandatory) to mask, to deny, to lose touch with the innately natural human senses. We wish neither to experience the uncomfortable feeling, see the irregular form, hear the discordant sound, smell the unsavory odor, nor have the atypical thought. And while our very survival is no doubt due to being protected from experiential excesses, it nevertheless appears that we seek mightily to encapsulate ourselves in such unnatural environments as to become non-human. The irony, of course, is that try as we might, we still are human, despite the rather massive assaults we make on the bonds of social responsibility. The question presently being raised concerns how much longer the social qualities of humanness can survive such repeated lapses in the maintenance of the social covenant.

Having hopefully laid the necessary conceptual groundwork, specific consideration will now be given the central thesis of the present essay: that the currently fashionable "right to die" movement is yet another particularly potent threat to the social contracts we are each obliged to honor. In this connection, Skinner, somewhat out of character relative to his behavioralist image, has suggested that the state is morally obliged neither to make our lives unnaturally easy nor to make them unnaturally difficult.[6] Rather, the state is, in his view, obliged to do what is both more difficult and ultimately more rewarding--permit, if not encourage, each of us to live our lives, valleys and peaks and all. Thus, while "pulling the plug" on a human life may in individual cases be easily (too easily, we would argue) rationalized and have the full and knowing consent of the person whose life is to be ended, for the state to formalize its approval of such action may create a culturally normative climate that undesirably relieves the afflicted and their survivors of their responsibility as human, social beings to be kept sensitized to the value of "hanging on," of paying what may even be considered an exorbitant price for the continued realization that the tenuous thread of humanness can be irreparably broken once we slip into the insidiously convenient posture of avoiding the often difficult and painful demands made on us by both our living and our dying.

Thus inroads are rapidly being made along the path that leads to anti-life. At first we seek the acceptance of either active or passive euthanasia as a humane response to both helplessness and hopelessness in the face of our finite nature. But even with the many possibilities of the individual's own good not being served by this principle, it nevertheless is more person-oriented by far than the next, apparently inevitable, step we take, a step illustrated by the recent proposal of some Harvard medical professors that "national priorities" ought to determine, on a cost/benefit basis, who shall be medically helped and in what way. The professors from Harvard additionally suggest that these sorts of ultimate decisions should be based on statistical studies: "For example, a doctor considering an operation might weigh a patient's symptoms against national statistics showing what happens if such patients are or are not operated on, what risks occur if the operation is or is not done, and what the cost to the patient and society might be in terms of dollars, discomfort, and life-saving."[7]

At the very least it is emotionally chilling to think, with the good doctors from Harvard, that frequently irreversible decisions about human lives might be made using statistical averages (mean? median? mode?) as the backdrop against which life-or-death outcomes for particular individuals would be measured. But however sociobiologically rationalized such a policy of individual selfishness masked as the "public good" may be,[8] it remains frighteningly reminiscent of Turnbull's anthropological account of the Ik in east-central Africa. Perhaps the most fundamental characteristic of the Ik is their single-minded pursuit of self-satisfaction, their disdain for altruism whether individually or collectively expressed. Thus Turnbull's instructive conclusion that "if man has any greatness it is surely in his ability to maintain . . . (such) values (as 'love,' 'truth,' 'beauty'), clinging to them to an often bitter end, even shortening an already short life rather than sacrificing his humanity. . . . The Ik have relinquished all luxury in the name of individual survival, and the result is that they live on as a people without life, without passion, beyond humanity."[9]

We are not presently suggesting the desirability, then, of a totally individualistic society wherein each person is left to his/her own best devices in avoiding annihilation by the Four (or more) Horsemen of the Apocalypse. As Turnbull has persuasively counseled, the Ik are not to be emulated. Our purpose, instead, is to suggest that the quality of humanness is increasingly strained and threatened with fatal rupture by man's Saran Wrap existence, that to be responsibly human is to be affected and challenged by, not protected from, the human condition. The more these essential responsibilities are avoided, the less sure our grip on humanness becomes. By deadening our sensibilities to both the pleasures and the pains of being human, we irresponsibly move down the mutated road to anti-life, a journey beyond humanity from which there can be no returning. "Do not go gentle into that good night/Rage, rage against the dying of the light." The poetic counsel of Dylan Thomas was perhaps never more appropriate than now.

Notes

[1] See A. Gouldner, The norm of reciprocity, American Sociological Review, 1960, 25, 161-178; G. C. Homans, Social Behavior: Its Elementary Forms (New York: Harcourt Brace Jovanovich, 1974); J. Rousseau, The Social Contract (New York: Hafner, 1962).

[2] K. Menninger, Whatever Became of Sin? (New York: Hawthorn Books, 1973).

[3] P. Berger, Invitation to Sociology: A Humanistic Perspective (New York: Anchor Books, 1963).

[4] T. Szasz, The Manufacture of Madness (New York: Harper & Row, 1970).

[5] E. Goffman, Presentation of Self in Everyday Life (New York: Anchor Books, 1967).

[6] B. F. Skinner, The ethics of helping people. In Readings in Social Psychology 77/78 (Guilford, Ct.: Duskin, 1977).

[7] V. Cohn, Harvard team challenges view that a human life is priceless, The Washington Post, May 24, 1977, p. A12.

[8] See E. O. Wilson, Sociobiology: The New Synthesis (Cambridge, Ma.: Harvard University Press, 1975).

[9] C. M. Turnbull, The Mountain People (New York: Simon and Schuster, 1972), pp. 294, 295.

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Section O

SOUTHERN REGIONAL PROJECT S-114

"Students Enrolled in Colleges of Agriculture at Southern, Land Grant Universities: A Preliminary Overview." John E. Dunkelberger, Compiler.

Contributors:

George W. Ohlendorf, Louisiana State University
John E. Dunkelberger, Auburn University
Thomas A. Lyson, Clemson University
Wolfgang Frese, Mississippi State University

PANEL PRESENTATION

STUDENTS ENROLLED IN COLLEGES OF AGRICULTURE AT SOUTHERN, LAND-GRANT UNIVERSITIES: A PRELIMINARY OVERVIEW[1]

John E. Dunkelberger, Compiler

Panel and Contributors

C. Raymond Sollie, Moderator[2]
George W. Ohlendorf
John E. Dunkelberger
Thomas A. Lyson
Wolfgang Frese

During Spring 1977 a mailed questionnaire was distributed to a 15 percent random sample of all students enrolled in Colleges of Agriculture at 1862, Land-Grant Universities in the South.[3] A total of 2,535 students completed and returned usable questionnaires. Processing of of these data has just been completed allowing for this preliminary and cursory overview of selected sample perameters. The following discussion involves data provided by this sample of agriculture students. Information covers such topics as personal and parental backgrounds, high school experiences, work and college experiences, and personal goals. A control for sex differences is introduced in the presentation for the latter three of these concerns.

Background Characteristics

A number of characteristics describing each of these agriculture students was obtained. One of these, the sex of the student, revealed that slightly more than one-fourth were women in an academic area generally considered a man's domaine. Typically, these students were in the college ages of 18 to 22 years and single. Only 17 percent were 23 years old or older and less than 15 percent had ever been married.

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[1] Presentation made at the Annual Meeting of the Southern Association of Agricultural Scientists, Houston, Texas, February 1978. The research was supported by individual state projects contributing to SCRS, USDA, Southern Regional Research Project (Hatch), S-114.

[2] Panel participants represent the following universities, Mississippi State University, University of Louisiana, Auburn University, Clemson University, and Mississippi State University, respectively.

[3] Texas Technological University, although a non Land-Grant institution, was included in the study because of its large program in agriculture.

Virtually all of these students were citizens of the United States. Foreign nationals represented less than 3 percent. Moreover, of these students only about 8 percent were from states outside the Southern region. Texas was the home state of 24 percent of all agriculture students in the South. No other state except North Carolina (12%) accounted for as many as 9 percent of the students.

Black students represented less than 1 percent of the students enrolled in Colleges of Agriculture at 1862 Land-Grant Universities in the South. Nonwhite students overall represented only 5 percent of these agriculture students.

The majority of students were urban reared. Almost 60 percent lived in cities of 10,000 population and larger, and only one-fifth grew up in the country or on farms. Many of those with origins in the country or in small towns had lived within 50 miles of a metropolitan center.

Parental Profile. Here we consider the characteristics of parents whose children selected a college major offered in a Collge of Agriculture. Only one-fourth of these parents presently live on a farm or ranch. Somewhat more grew-up in the open country with 44 percent of the fathers and 37 percent of the mothers doing so. However, a significant proportion of both parents (37 and 39 percent of fathers and mothers) were reared in urban areas.

The educational attainments of the parents are generally high for their generation. Fathers were more likely than mothers to have completed college (44 percent compared to 29 percent), but more than 91 percent of the mothers had graduated from high school and 88 percent of the fathers.

Approximately 85 percent of the fathers were either employed fulltime or were self-employed. One-half of the mothers were housewives, but four of every five of the employed mothers held fulltime jobs. More than one-half the fathers were employed in professional or managerial occupations, and more than one-third of the mothers were employed in professional or clerical occupations. Only one-fourth of the fathers were employed in agricultural occupations and the majority of these were self-employed farmers or ranchers. Average annual incomes were $20,000 and above for 57 percent of all families.

University Profile. These students attend 14 Southern universities offering a variety of curricula within a College of Agriculture. The number of students enrolled in the College of Agriculture in each university varied widely. This is reflected in the proportion of students representing each university. Proportions ranged from a low of 3 percent for the University of Arkansas to a high of 20 percent for Texas A & M University. Half of the schools each accounted for 5 to 6 percent of all students. Only North Carolina State University joined Texas A & M University in having more than 10 percent of all students enrolled in Colleges of Agriculture in the South (13%).

Students were pursuing a wide variety of degree programs. The most frequently declared major was general animal science (13%). Other majors accounting for 7 to 8 percent of all students were Agricultural Economics (7.6%), Agronomy (6.9%), and Horticulture (7.8%). Upper classmen were more numerous than underclassmen, probably reflecting the impact of community college programs on enrollment. Seniors accounted for one-third of all students, with slightly more than one-fourth juniors, somewhat more than one-fifth sophomores and just under one-fifth freshmen.

High School Experiences

The vast majority of agriculture students attending 1862, Land Grant Universities were the products of publicly supported high schools. Only 12 percent had attended a private school with this proportion about equally divided between secular and religious institutions. Women were just slightly more likely than men to have attended a private school with this difference reflected in a larger proportion of women attending schools operated by religious organizations.

For the most part, these students had attended high schools of "moderate size." Small graduating classes numbering fewer than 100 students accounted for only one-fourth of these agriculture students. More than half had attended schools with graduating classes in excess of 200 students. The modal size category of 200 to 400 students accounted for almost one-fourth of all agriculture students. Women students in agriculture were more likely to have attended larger schools than men. Sixteen percent more of the women had attended high schools with graduating classes larger than 200 students.

Grades achieved in high school by these agriculture students were high. Each student reported his or her high school grade point average on a scale from A to F. The majority (55%) classified themselves B students with an additional 28 percent indicating an A average. Women were more than twice as likely as men to report being A students (45% versus 21%).

Availability of agriculture courses in the high schools attended was determined from student reports. About half the students (48%) indicated that at least one agriculture course had been offered. However, only 23 percent reported enrolling in an agriculture course while in high school. Women were less likely to report that such a course was offered and rarely had a woman taken an agriculture course (only 6%). These data indicate that fewer than one-fourth the students enrolled in majors offered in Colleges of Agriculture had been exposed to formal agricultural training at the high school level. These data challenge the conception of high school agriculture courses as an essential preparatory phase and primary referral system in the recruitment process for students entering agricultural programs at the college level.

In an attempt to determine factors related to a student's enrollment in an agriculture major at the college level, each respondent was asked whether any particular high school course or courses influenced this decision. A considerable majority (76%) responded that none was especially influential. However, among that 24 percent who indicated an influential course, more than half indicated a course in biology and 37 percent a course in agriculture. No difference was observed between men and women in the proportion that reported having taken an influential high school course. On the other hand, the vast majority (80%) of women indicated a biology course as being important in determining this decision. Thus, although most college agriculture students have no high school exposure to agriculture courses, almost half the men who take such courses do perceive them influencing their college plans.

Organizational participation within the high school setting was determined by asking each student to indicate for each of 13 types of activities whether they had belonged and whether they had served in a leadership capacity. Only one activity--high school team sports--had involved more than half (61%) of these students with a highly disproportionate preponderance among males. Other activities that involved 40 to 50 percent of the students included various subject matter clubs, intramural sports, debate-band-chorus, honoraries, and student government. Women predominated somewhat in the more academic types of activities and men in sports and student government.

Activities that have a traditional relationship to rural areas and agriculture are 4-H, FFA, and FHA. Slightly fewer than one-fourth of these college agriculture students had participated in either of these agriculture related activities. Of those students who participated in 4-H work, half (12%) indicated they had served as leaders. Men were more likely to have participated and to have served as a leader than women. Participation in FFA and FHA was much more sex specific. Only 6 percent of the women participated in FFA and only 2 percent of the men.

Work Experiences

Turning to the work experiences of our student sample, it was found that considerably more males than females had worked in some agriculturally related job. In fact, over half of the men reported working specifically on a farm or ranch compared to less than one-third of the women. Additionally, over two-thirds of the men had some prior non-farm agricultural work experience compared to only 39 percent of the women. Finally, although not all students had agriculturally related work experiences, almost 90 percent of the study population had held non-agricultural jobs at one time or another.

College Experiences

About 60 percent of these College of Agriculture students were enrolled at the same university they first entered. Of the remaining 40 percent, more men than women came from two year colleges, while more women than men transferred from four year schools. Additionally, slightly over half of the present sample of agriculture students had changed their curriculum or major since entering college, of those changing majors, almost half of the transfers came from non-agriculture subject areas in other colleges within the university.

In helping the student choose a major course of study, parents were deemed most influential. College teachers and college friends also manifested some decision-making influence. However, the impact of teachers and friends was found to be considerably less important than that of the student's mother or father. Other people manifesting somewhat less influence included other relatives (e.g., brother, sister, etc.) and acquaintances (e.g., high school teachers, counselors, clergymen, etc.).

One factor — "to prepare for a career" -- stood out as the most important reason for selecting their present college major. Almost 95 percent of the men and women in the present sample checked this reason as being "very important" or of "some importance" in their educational decision-making process. A preference for country versus city life and the opportunity to help others also were considered important decision making factors for about 75 percent of these students.

Over half of the sample chose their present major because, among other things, it would insure a good income. Similarly, over half the men and one-third of the women selected their major because of a successful prior experience in agriculture. About a third of these men and women considered a previous college course related to their major to be of importance in deciding to pursue a career in this area.

A number of other factors including "my family thought it would be best", "college teacher or advisor suggested it", "chance to make better grades", etc. were deemed of lesser importance. It is interesting to note that 39 percent of the men and over half of the women reported the response "other" (i.e. a factor not listed in the questionnaire) as "very important" in helping them choose their present college major.

Parents, summer jobs and the student's own savings were the most important sources of financial assistance for college expenses. About half of these men and women used part-time work while at college to help meet their college expenses. Scholarships as well as student loans and grants provided aid to about one quarter of the students.

Finally, about 40 percent of the students were members of some departmental club; 20 percent held membership in one or more societies; 20 percent were members of honor fraternities or sororities; and about 15 percent belonged to social fraternities or sororities.

Adult Goal Orientations

Educational Aspirations and Expectations. The findings indicate that a large percentage of students (39%) desire a professional or doctorate degree. When asked what degree they actually expect to obtain, a majority (57%) indicated an undergraduate degree with only 18 percent actually expecting to obtain a professional or doctorate degree. Women had higher educational aspirations and expectations than did men.

Graduate school expectations indicate that 83 percent of those agriculture students who plan to go to graduate school want to do so in agriculture. Of those who plan to attend graduate school, 58 percent want to pursue their graduate career at the university they are presently attending. A greater percentage of women than men expect to continue their graduate education in agriculture, however, a larger percentage of women wish to do so at another university.

Occupational Aspirations and Expectations and Expected Income. Using Census Bureau categories the modal occupational aspiration and expectation for all students is to be a farmer. But, while farmer was the modal occupational category for both aspirations and expectations of the men, the modal aspiration category for women is veterinarian and the modal expectation category is florist or nursery owner. About twenty percent of the agricultural students aspired to and expected to obtain non-agriculture jobs. This percentage did not vary significantly for men and women.

Almost 36 percent of the students expected to earn between $10,000 and $12,500 a year in their first fulltime job. While this was true for about 38 percent of the men, only 29 percent of the women expected to start this high. In general, women expected to make less money than men in their first fulltime job. This is consistent with lower incomes often earned by women in the labor force.

Residence Aspirations and Expectations. When asked what type of residental community agricultural students want to live in after completing their college education, the largest percentage (38%) said they would like to live on a farm or ranch. About 60 percent said they preferred a farm (ranch) or rural open country residence as a place to live. While 21 percent of the women said they would like to live in a city with over 50,000 residence, only 13 percent of the men showed a similar preference. Of the students who expressed a preference for living in the country or in a city of less than 50,000 in population, almost half (48%) said they would like to live within 30 miles of a city with population over 50,000. Whereas, about 57 percent of the women said they wanted to live within 30 miles of such a city, only about 46 percent of the men expressed this desire. About 26 percent of all students said it didn't matter how far they lived from a city with a population over 50,000.

When asked if they expect to own a farm or ranch in the future 59 percent said no. Surprisingly a larger percentage (63%) of the women said they expected to own a farm or ranch than was the case for men (41%). These figures are very similar to those obtained when asking students if they had inherited or anticipated inheriting a farm or ranch. This figure is 63 percent for women and 49 percent for men.

Conclusions

These preliminary data reveal for one thing that a sizeable number of women students are enrolled in curricula offered by Colleges of Agriculture at Southern Universities and that these women students differ in a number of ways from their male counterparts. Women have somewhat different family origins, agriculturally related experiences and adult goals. Although data are not yet available on sex differences in the choice of college major, we anticipate that women students will exhibit a somewhat different distribution among the various curricula than men. Universities that hope to continue to increase or to maintain student enrollments must consider the needs of women in agriculture and agribusiness. At one level this means that courses should not assume farm and rural life experiences (true also for a majority of male students); and at another level, this means that new curricula to train students not only for a narrow set of agribusiness pursuits, but for a wider variety of employment opportunities relating to the people and problems of rural areas should be developed.

A second point clearly depicted by the data is the low correlation between a farm background and enrollment in a curricula offered in the College of Agriculture. There is little support for the stereotyped mobility process sometimes referred to as the "Agricultural Ladder." In this process a youth is seen as reared on a farm, attending a small rural high school, completing vocational agriculture courses, being active in 4-H and/or FFA, and matriculating to the land-grant university to major in agriculture before returning to the farm or entering agribusiness. Little support is found for such a patterned set of experiences like this among any sizeable proportion of todays agriculture students.

Section P

SOUTHERN REGIONAL PROJECT S-120

"Social Organization for Development of Low Income Rural Counties."

"Decision-making for Development: Analysis of Influential Networks in Rural Communities." Stephen Lilley and Nelson L. Jacob, Clemson University.

"The Linkage of Community Decision-Making to Economic Development: A Theoretical Perspective." H. Max Miller, University of Georgia.

"Constituencies, Clients, and Agreement in Rural Development: A Preliminary Statement for Project S-120." Donald E. Voth, University of Arkansas.

"Expansive vs. Nonexpansive Growth in Rural Communities: A Methodological Statement." Stephen G. Sapp and Peter F. Korsching, University of Florida.

"Support for Industrialization as a Means to Rural Development." Edward L. McLean and Glenna Colclough, Clemson University.

Decision-making for Development:
Analysis of Influential Networks in Rural Communities*

Stephen Lilley
Nelson L. Jacob

Introduction

The purpose of this paper is to explore some of the conceptual and methodological possibilities of the analysis of influential contact data from regional project S-120. In the following sections we suggest some analytical techniques and discuss briefly the problems and potentials of each method. The methods discussed arise from four theoretical distinctions we think are important to the analysis. These are centralized and dispersed patterns, degree of homophily, levels of development, and self-reported versus other-reported data. Data gathered from respondents in two South Carolina counties are used for illustration.

Centralized and Dispersed Patterns

Sociologists involved in community studies have long focused their attention on formal and informal networks of interaction and communication among influentials on various community issues. Although the theoretical positions of sociologists have varied widely, there seems to be agreement that a viable communication pattern is an essential prerequisite for the successful resolution of development activities. These patterns of communication, which result from interaction among individuals in the community, have been variously termed networks of influentials, the structure of leadership, or the "elite" of the community. Whatever they are called there seems to be two characteristic forms of these structures that have been postulated by sociologists. These may be termed the centralized and dispersed patterns (Laumann, _et_. _al_., 1977).

The centralized view of community leadership structure is represented by Hunter (1953) and others following his lead (Miller, 1958 and Form and D'Antonio, 1959, for example). Their view is of a hierarchical organization of leadership with a core of key influentials who originate policy decisions and suppress issues they do not want brought before the community. This elite core often has a subordinate structure that serves to implement their decision. The centralized pattern of communication structure is similar to the national power groups proposed by Mills in _The Power Elite_ (1956).

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In contrast, pluralist researchers characterize the leadership core as reactive, with leadership dispersed among a variety of interests in the community (Laumann, et. al., 1977). In this view, relatively few persons participate in a broad range of community issues, rather, there are leadership structures which specialize in particular kinds of issues. Also, those who do participate tend to arrange compromise settlements among competing interests and usually do not take an active role in initiating or suppressing particular policies.

According to Laumann, et. al., the distinction between centralized and dispersed leadership structures may have several dimensions. One of these concerns the overlap of sets of influentials in various issue areas. A number of researchers, including Clark (1968) and Grimes (1976), used a high degree of overlap of participation of leaders in a range of issues as a measure of centralization. In this paper we discuss the problem of determining the degree to which community influential structures are centralized by examining the overlap among participants in four development areas.

Homophily

A second distinction in terms of leadership or influential communicative structures to be discussed is that of Lazarsfeld and Merton's (1954) homophily. Homophily refers to biases that may exist toward interacting with or contacting only those who share a viewpoint on a specific community issue. The existence and strength of homophily in a communications or contact network is of course important to the form of decision-making in a community. A high degree of homophily implies a polarized leadership structure. On the other hand, a low degree of homophily allows the possibility of communication between opposing sides of a community issue, which may increase the possibility of influence brokering or compromise between the two or more viewpoints. Although this is an important theoretical distinction, we were not able to adequately examine the degree of homophily for the South Carolina communities because we obtained only a few names when we asked what groups or individuals opposed the specific development issues. That is, we found little variation in outcome preferences on specific community issues, although other responses indicated a great diversity in attitude toward the issues. However, substantial variation in outcome preferences might exist in other S-120 sample counties.

Level of Development

A third comparison or distinction that can be made is the level and form of the communication networks of two communities at relatively different positions on a development continuum, at least as measured by a single indicator, per capita income. The two communities compared here are Kershaw and Union Counties. Kershaw County had a per capita personal income of $4,828 in 1974, fourth highest in South Carolina; Union County had a figure of

$3,724 and a rank of 28 out of 46 South Carolina counties. A third county, Williamsburg, to be analyzed at later date, is ranked 42nd in the state with per capita income of $3,313. We think this range of counties provides us with three widely-spread points on the development continuum, or at least one end of it, because all counties meet the low-income criterion for inclusion in the regional sample.

The examination of the nature of communication structures of communities at various levels of development is at the core of one purpose of the S-120 project; that is, to present an action scheme for development. If we are able to find theoretically significant differences in communication networks, then we might be able to make some prescriptions for optimum organization. In doing so, we must make certain assumptions about the cause-effect relationsip between communication networks and development. One problem that arises in the S-120 project is in the delineation of communication structures that existed prior to, during, and after development "events." That is, separating the structure in place at the time of the development from that which spurred the development and from the structure which may have resulted from the development issue. It may be that there are stages of optimum organization; one that is suitable for a particular point in the issue may be completely unsuitable at another point.

Self-Reported and Other-Reported Data

Finally, a fourth comparison can be made between self-reported and other-reported patterns of communication or contact. We were interested to see if there were any significant differences between the levels of or amount of contacts reported by a respondent and the number of contacts reported by others with him. Which pattern of contact is the "true" one cannot be determined. It is possible, however, to tentatively examine a Miller (1977) hypothesis that "in cases of reciprocal recall of contacts the individual recalling the greatest number of contacts will be of lower relative status."

S-120 Method

The research procedure conducted in South Carolina can be summarized as follows:

1. Identify a set of recent local issues with which the community had been faced. In South Carolina, we first developed a classification scheme for development issues, and then searched every newspaper in each county published in the five years previous to July 1977 for development issues. The history of each issue, including persons involved and their specific role, was recorded. Each issue was categorized according to the scheme we previously developed. Economic Development and Development of Health Services were two general areas of development used for all counties in the regional sample. In addition two specific development issues were identified for both Kershaw and Union Counties. In Kershaw the additional issues were Rural Land Use and Changes from Crop Farming to Forestry; in Union, Industrial Diversification and the Development of a Program of Services for Senior Citizens.

2. Delimit the influential population. This step involved asking identified positional leaders in each county who were the influential persons involved in each of the development areas or issues. The influentials mentioned at least two times for any one of the areas or issues made up the original respondent list. As respondents were interviewed, the respondent list grew with the addition of persons who were mentioned and ranked by the original respondents. A total of 45 persons in Kershaw and 34 persons in Union were interviewed.

3. Delineate the networks of communication among influentials. This step involved the analysis of contact data in terms of frequency and direction of the contacts, and ranking of the influentials' importance to the resolution of the issue. The method of categorizing responses to the contact questions, termed Matrix Manipulation Methodology, was developed by Glenn McCann (1977).

Matrix Manipulation Methodology

There are four basic measures of influence.

1. Simple Contact Measure - the number of times each influential was contacted by other individuals for each development issue.

2. Contact Frequency Measure - each influential in the four development areas who had been contacted or reported being contacted answered frequency of contact in one of six categories:

   1. Have contacts only on special occasions
   2. Have contacts monthly
   3. Have contacts weekly
   4. Have several contacts weekly
   5. Have contacts daily
   6. Have several contacts daily

The Contact Frequency Measure was constructed as follows:

Influential Contacted	Number of Contacts	Frequency of Contact	Contacts X Frequency
004	7	3	21
	2	6	12
			33

Thirty-three is the Contact Frequency Measure for respondent 004.

3. Contact Direction Composite Weighted Score

Each influential interviewed indicated for any influential he is in contact with that:

(1) "Most of the time I contact him/her, or

(2) Most of the time he/she contacts me," or

(3) "About equal each way."

Contact Direction Composite Weighted Score for Respondent 004

(Self or Other-Reported Data)

Respondent	004 Contacts Other	004 Receives Contact From Other	004 Equal Each Way
015	X		
016		X	
017	X		
018	X		
019			X
020			X
021			X
Total Contacts	3	1	(6)
Contact Directions Simple Scores	3	2	9

Contact Direction Composite Weighted Score 14 ÷ 10 = 1.4

As outlined by McCann (1977: 2)

> . . . . each contact given receives a weight of 1; each contact received gets a weight of 2; each equal contact receives a weight 1+2, and for purposes of computation each equal contact is counted as two contacts. The Contact Direction Composite Weighted Score is simply the sum of the (inflated) contact scores divided by the number of (inflated) contacts.

A score between 1.0 and 1.49 indicates that the respondent contacts others more than they contact him; 1.51 to 2.0 indicates he is contacted more than he contacts others;and 1.5 indicates equal contacts.

These three measures were calculated by development area for both counties by self-reported and other-reported data.

4. Summary Rank Measure - is the weighted frequency of contact by rank received. Each influential could have been ranked as first, second, or third most influential in each development area. The ranks were inverted and then multiplied by the frequency of each type. The Summary Rank Measure was calculated only for other-reported by each of four development areas.

Contact Matrix Measures

Each of the above four measures were calculated for each respondent using the other-reported data for both Kershaw and Union Counties by each of the four development areas. All but the Summary Rank Measure were calculated for each respondent by development area using self-reported data. An example of the four measures for two respondents in Union County is given in Table 1.

Table 1. Union County (Other-Reported)

Respondent	Economic Development				Industrial Diversification				Health Development				Senior Citize Program			
	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d
001	16	26	1.3	12	12	18	1.3	9	6	6	1.3	7	3	3	1.3	3
002	3	3	1.3	0	1	1	1.5	0	2	4	1.5	3	15	36	1.3	2

(a) Simple Contact Score
(b) Contact Frequency Measure
(c) Contact Direction Composite Weighted Score
(d) Summary Rank Measure.

Potential S-120 Measures

Centralized Measure

One commonsense measure of community decision-making centralization is that of Clark (1968).

> Consider first a situation which most writers would label highly centralized or monolithic: a community where the mayor initiated action on a decision, was supported by the downtown businessmen, and opposed by the labor unions and the newspaper. The mayor was the major "entrepreneur" in bargaining between the various groups. And the mayor - businessmen coalition prevailed. Under such circumstances, the total number of actors in the issue would be four: mayor, businessmen, labor unions, and newspaper. If these same four actors, again playing the same roles, were the only ones involved in the

> other three issues *there would still only be a total of four actors in all issue areas, which, dividing by the number of issue areas, yields a final score of one for the community* (p. 580. Italics mine.)

This method is simple, but poses some difficulty in comparing two communities of different sizes. A larger absolute number of participants in a community issue may reflect a greater degree of decentralization, but it may leave us with the problem of proportionally smaller decision-maker networks being less centralized than proportionately larger ones. Clark (1968: 581) refines the procedures by attempting to weight participation by the degree of involvement in the issue. S-120 data allows for a similar procedure. Involvement in the issues could be weighted by the number of contacts, or by one or more of the contact frequency/direction/rank measures developed by McCann (1977).

Levels of Development

As previously mentioned, comparison of the form and level of the communication network of communities at different points on the development continuum is essential if statements are to be made on "optimum organization for development." Separating differences in structure due to differences in development issues from those due to the "quality" of the structure is important here. Presumably having two issues shared by all sample communities, Economic Development and Development of Health Services, will enable us to separate these effects.

Self Versus Other-Reported Data

The final distinction is between self-reported and other-reported data. It is important, at least methodologically, to examine any differences in self- and other-reported data.

Summary

To summarize, there are at least four distinctions that we feel are important to the analysis of contact structures:

1. Centralized and Dispersed Patterns

2. Level of Homophily

3. Relative Level of Development

4. Self-Reported and Other-Reported Data

In tabular form the relations can be diagrammed as below:

Structure of a Development Communication Network in Rural Counties*

	Centralized Structure		Dispersed Structure	
	Homophily	Heterophily	Homophily	Heterophily
Relative level of Development**				
High				
Medium				
Low				

*For Self-Reported or Other-Reported
**Based on Per Capita Personal Income Levels

REFERENCES

Clark, Terry N. 1968. "Community Structure, Decision-Making, Budget Expenditures, and Urban Renewal in 51 American Communities" American Sociological Review 33 (August): 576-593.

Form, William H. and William D'Antonio. 1959. "Integration and Cleavage Among Community Influentials in Two Boarder Cities" American Sociological Review 24 (November): 804-814.

Grimes, Micheal, Charles Bonjean, Larry Lyon, and Robert Lineberry 1976. "Community Structure and Leadership Arrangements: A Multidimensional Analysis" American Sociological Review 41 (August): 706-725.

Hunter, Floyd. 1953. Community Power Structure. Chapel Hill: University of North Carolina Press.

Laumann, Edward O., Peter Marsden, and Joseph Galaskiewicz 1977. "Community Elite Influence Structures: Extension of a Network Approach" American Journal of Sociology 83 (November): 594-631.

Lazarsfeld, Paul F. and Robert K. Merton. 1954. "Friendship as a Social Process: A Substantial and Methodological Analysis." In Freedom and Control in Modern Society, Monroe Berger et. al., eds. New York: Van Nostrand.

McCann, Glenn. 1977. "Matrix Manipulation Methodology." Correspondence to S-120 Technical Committee.

Miller, Delbert. 1958. "Decision-making Cliques in Community Power Structures: A Comparative Study of an English and an English City" American Journal of Sociology 64 (November): 299-310.

Miller, H. Max. 1977. "Method of Establishing Relevant Organizational Structures Related to Decision-making for the Purpose of Development in Rural Areas" S-120 Technical Committee Meeting, Atlanta.

Mills, C. Wright. 1956. The Power Elite. New York: Oxford University Press.

THE LINKAGE OF COMMUNITY DECISION MAKING TO ECONOMIC DEVELOPMENT: A THEORETICAL PERSPECTIVE

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The Linkage of Community Decision Making to Economic Development: A Theoretical Perspective

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Various efforts in community improvement programs in most instances are either wholly directed toward economic development at all levels or, at least have a strong emphasis upon this particular dimension[1]. What is the linkage of decision-making to economic development or, what is the adaptive community as regards economic development? Are accomplishments in economic development at the community level made on the basis of complete harmony and consensus by differing concerned groups? These and other questions relating to the nature of community decision-making and the implications for economic development are the subject of this paper.

Community Change

In attempting to formulate basic assumptions underlying community change it should be pointed out that newer formulations regarding the structure of human communities appear relevant. Harold Nix, in a manuscript entitled "The Community and its Involvement in the Study-Action-Planning Process" points out that the growing body of literature on "community, community leadership and community action has demonstrated at least six basic points.[2] First, modern complex communities are not made up basically of people or groups with common interests and goals but of people and groups with many different interests and goals. Second, social power or leadership is present and exercised in patterned ways in all social systems including communities. Third, community leaders and decision-making groups can be identified by certain techniques. Fourth, only a very small percentage of citizens of a community become actively involved in most community decision-making processes.

The fifth, successful community action depends, in large measure upon finding and involving the key community leaders. Sixth, studies have demonstrated that the professional planner is much more likely to lead to action toward improving community programs when he involves lay citizens early in his study planning process."[3]

One implication to be derived from the material just cited is that knowledge of the nature of the community and community leadership is significantly related to principles of community change and approaches to planned change. Nix maintains that if these assumptions are correct, those concerned with community improvement will tend to be more successful if they can be made cognizant of the special-interest and competitive nature of communities, identify key community leaders and groups, and involve leaders, groups, and citizens in a study-planning action process.[4]

The Concept of Community

Bates takes the view that the social facts of which communities are made are the relationships between the various special interest groups and organizations within a locality.[5] There are two basic types of "in between" or "interstitial" relationships that are described. The first type is referred to as "exchange interstitial" relationships in which individuals, groups and organizations exchange their specialized goods or services.[6] This relationship could be typified as the merchant-customer or professional-client relationship.

This author labels the second type of community relationship as the "coordinative interstitial" groups. The function of coordinative interstitial relationships is to manage the relationships among two or more groups or organizations that have differing and potentially complicating interests.[7] Examples cited would be a local chamber of commerce, a community development council or an informal decision-making clique.[8] Several special-interest groups such as a bank, a hardware store, a realty company, a law firm or industrial plant would be represented as members of this type of organization. Community power appears to be gained through exchange relationships, but the experience of community power is primarily through coordinative relationships.[9] Nix states that "research findings suggest that reputed community leaders gain influence over others by occupying economic and governmental positions of exchange which allow them to control, in varying degrees, the lives of other people.[10] Influence over community wide affairs is executed by active participation" in influential organizations a coordinative nature which are composed of representatives of different interest groups and organizations."[11]

It should be emphasized that these two basic types of relations are quite different from special interest groups and organizations at the community level such as families, stores, schools or other organizations where the role behavior of members in relation to each other is culturally or ideally reciprocal and where members are supposedly oriented to the basic goal of the groups or organization represented.[12] In both exchange and coordinative interstitial groups the role behavior is basically "conjunctive" or competitive in nature. Nix points out that "as customer and merchant meet and as representatives of various special-interest groups meet in the local chamber of commerce or a community planning council they are basically oriented to different goals.[13] That is, they are expected to defend the interests of the organizations or groups they represent. Nix poses the question "Then why do they meet?" In answer to the question this author states "They meet because the division of labor or specialization has made them very interdependent upon the goods or services provided by each other and they realize that it requires come coordination and compromise to provide stable conditions within which to pursue effectively their special goals while obtaining the goods and services provided by others."[14]

The purpose of this theoretical elaboration of the concept of community has been to suggest "that interstitial groups and organizations should be the focus of attention if we are to understand the community."[15] A related purpose is to suggest that communities, rather than basically systems of cooperating individuals, groups and organizations with common goals have a orientation in both exchange and coordinative interstitial groups that is basically conjunctive or competitive. "Hence the force which underlies community-wide cooperation is not so often a common goal as it is an interdependence brought about by the increasing specialization in society."[16]

On the basis of these assumptions the community may be defined as "a social system whose function is to manage the competition and conflict which arises out of a division of labor in society and the scarcity of resources."[17]

Nix further suggests that "the adaptive community is not one with complete harmony and concensus, but one whose specialized leaders and group representatives realize that their interdependency requires an organized approach to compromise and a system of conflict management. Furthermore, the need for an organized or patterned leadership structure for controlling competition and conflict becomes greater as the community grows larger, more complex and more interdependent."[18]

Community Leadership

The capacity to determine the action of others constitutes social power. If this social power is used, which it may or may not be, leadership is exercised. Thus, the basis of leadership is social power.[19]

Social power has its source in authority, influence and unlegitimized coercion. Positions one holds in groups or organizations and the authority vested in these offices or positions constitute a part of an individual's power. Authority is the right to control specified aspects of the behavior of other members of that particular group. Authority tends to be "more characteristic of special-interest groups and organizations and their associated reciprocal relationships than of community-type (exchange or cordinative) groups."[20]

Another aspect of social power is not associated with an office or specific position but instead resides within the individual. This part of a person's social power is labeled influence and at the level of community is the result of two factors that are cumulative. First is influence growing out of all the positions or offices held which give him control over scarce resources such as goods and services, etc. and means of communication which gives him indirect influence over others beyond his authority. Second, is the result of personal qualities such as appearance, age, family background, character, knowledge and communication skills. Community influence involves not the "specific right" but the ability of an individual to control or influence the behavior of others in intergroup and interorganizational activities.[21] Exchange and coordinative relationships are characterized by the exercise of influence rather than authority.

Unlegitimized coercion involves taking the property of others through the use of force. In the study of leadership in communities and other groups or organizations there has been increased attention given to types of leaders.[22] The fact that differing techniques used in identifying leaders tends to uncover a predominance of different functional types of leaders has brought about the concern with types and functional kinds of leadership by level of influence. The types of community leaders are

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often summarized on the basis of different dimensions. These dimensions are (1) level and function (2) scope of influence, and (3) basic orientation. No attempt will be made in this presentation to identify and characterize the subtypes for each of the dimensions (See Appendix A).

Until this point in the paper our concern has been with an understanding of the nature of change, the nature of the community, leadership and community change for the purpose of the current topic.

Economic Development

The concept of "economic development" has historically been vague and has been applied in rather abstract ways. One of the basic characteristics that has been assumed appears to be in the implications for the betterment of human conditions through the process of planned change. Socially desirable objectives are typically achieved through implemented strategies of planned change. Social conditions are changed through the modification of culture and social structures as such, a normative process is involved since the specification of meaningful goals and methods of attainment of these goals as achieved by satisfying particular values and interests. The focus of economic development then, is upon the enhancement of human conditions of several people.

Social Indicators and Economic Development

The social well-being of individuals in any society or segment thereof relies extensively upon the ability of planners and policy makers to make coherent and relevant decisions regarding effective social policies, plans and programs. Social indicators provide a more accurate and objective depiction of the socioeconomic status of individuals, situated in geopolitical units such as society, state, region, county or community. Social indicator research, as a goal, can develop methodologies whereby planners and policymakers can obtain a better understanding of the degree of social well-being experienced by people and use that information in achieving balanced and equitable development. The rationale just stated suggests the applicability of social indicators for economic development. A system of social indicators can be developed to measure and evaluate social well-being over time. "Social policy decisions could then be based on what the examination of social data reveals; decisions would be reached and implemented for clearly objective reasons, and the *modus operandi* thereby established for making future decisions."[23]

Although the situation just described constitutes a goal, the relevant question becomes one of how might social indicator researchers organize their research activities in order to facilitate the achievement of their goals.

Klonglan, Beal, et. al. in a summary report entitled "Toward a Methodology for Social Indicators in Rural Development" state that in order to be most useful to the policymaker, descriptive social reporting must be complemented by analytic social reporting, with the latter being informed by social indicator modeling. However, the entire process is undergirded by the framework and working relationships developed during social bookkeeping involves the ititial phase of the process of "evolving" social indicators for use in planned social development.[24] Two of the chief objectives of the "evolution" process are the scientific development of valid and reliable social indicators and the application of these derived indicators in social policymaking efforts.[25]

The significant contribution for the purposes of the present research is the development of a preliminary set of social statistics which measure important multidimensional aspects of a modal concept from the perspective of social policy. It is also anticipated that a general framework will be used as a basis for mobilizing the set of social statistics. The framework will be refined in later phases of work and become the foundation for increasingly detailed analyses and planning.

Klonglan, Beal, et. al. present an orientation toward social bookkeeping which appears applicable to the research concerns of this paper. A fuller discussion of the framework devised and employed during the initial phase of social indicator work can be obtained in Chapter 5 of "Toward a Methodology for Social Indicators in Rural Development."[26]

In this chapter the authors define social well-being and present a method for delineating areas of social well-being. Once the areas of well-being are identified the first step in the process of constructing a system of social indicators is to develop a general framework for measuring social well-being. The authors suggest steps in achieving this objective and identify how policy-relevant human needs are not in each well-being area and how one can measure the degree of social well-being. These authors introduce the important components which in some way contribute to or are evaluative of social well-being and identify three distinctive classes of resources which are important for understanding the nature and course of social well-being. As such, the social bookkeeping phase, involves many basic research activities and many of the techniques and formulations described in this part of this report appear to have direct application to the research concerns os the regional S-120 research group.[27]

Conclusion

While there is certainly agreement on the utility of social indicators as descriptive tools, it should be pointed out that they do not become a part of the explanation without an adequate model of society, region, state or community (county). Some of the basic assumptions regarding the process of change in relation to collective behavior and organization for collective solutions to community problems as presented earlier provide this model. These assumptions, in essence are that: (1) human conditions in this technologically advanced society are, in large measure, the product of the social structure. Therefore, all proposed changes, regardless of their intent, involve changing the social structure, (2) if physical or technical change ultimately involves changing the social structure of a society, community (or whatever unit of analysis) then it follows that change agents should know what they are attempting to change. They should know something about peoples attitudes, scale of values felt needs or problems in general in relation to institutional areas of economic development, and (3) the change agent or scientist must learn something about the social structure in terms of values, beliefs, behavior relationships and leadership and account for differences on the basis of such factors as class, occupation and other aspects of the community.[28]

Bates and Harvey, in a recent work, reiterate that "the function of community structure is to provide a system of structural linkage among differentiated parts that permits these parts to exchange the inputs and outputs necessary to their own operation."[29] These authors contend that "it is this linkage system that constitutes an added structural element beyond those elements already included within groups and within organizations."[30] They add further "that the study of community structure should focus upon the study of interstitial groups and conjunctive relationships, as the critical structures that constitute the unique ingredients of the community as a social system." These authors then proceed to specify the critical interstitial groups that constitute the linkage system in American communities and to clarify what are considered organizations and independent elemental groups.

It is felt that the concerns of this project are related to analyzing the structure of social systems for the purpose of assessing change. We are looking at the system level at certain things (social indicators) that tell us on one hand what exists from a descriptive analysis, We are also proposing that the adaptive community will have certain structural and poocessual features. These are:

(1) An efficient governmental structure based on current socioeconomic conditions.

(2) A coordinative interstitial structure based on democratic principles and a wide host of skills to draw upon.

(3) A rational education process built into the coordinative structure (on educational dimension) that enables individuals together to look at basic rational facts and to make rational decisions.

(4) An adequate communication system tied together through formal and informal processes.

This prescription would again emphasize not the person-centered, but system-centered analysis. If these elements could be assumed, it would then appear that this approach can give people what they need and want. If it is decided, through social indicator research and through evidence gained concerning community processes, that economic development is needed then these mechanisms will give the ability to get it.

Economic development takes place only as it is dealt with in some community decision-making structure. Economic development can be initiated either within the community or from some other decision-making unit outside of the geopolitical boundaries of the community; e.g., state government, some business concern looking to locate within the community, etc. Warren would envision these as the horizontal and vertical approaches respectively. However, in social space such references are ambigious, at best, since social space occurs not merely in two dimensions.

Any economic decision which is to be made in the community must be supported either explicity or implicity by those who would dominate power within the community. Otherwise any development decision of an economic nature is likely to fall short of implementation due to lack of support.

First, let us consider an economic decision-making situation which occurs or is origniated by some agency or organization outside of the geopolitical boundaries of the community. In the basis of the Model presented by Bates and Harvey we should expect that various coordinative interstitial groups would be formed for the various interest groups in this area. These interest groups or coordinative interstitial groups would offer some decision and then represent that decision to the originating agency or organization. The decisions of these coordinative interstitial groups would be presented by some representative which is the formation of an interstitial group between these decision-making groups. An example might serve here. If the state government decides to build an expressway through some county, the originating decision-making structure is not based within the geopolitical space of the county. Various decision-making coordinative interstitial groups representing the county's interests will be formed to discuss the nature of the changes implied for the county by the decision made. Whether the decision is for or against the proposed expressway or interstate, the county will express their viewpoint through sending a representative to present their position. Logically this representative will have the most sway or established power with the origniating group. In many instances, such people as state senators and representatives and other notables will be used. In the Batesian terminology, a coordinative interstitial group is established between the originators and the recipients of the economic decision-making. It should be noted that this form of economic decision-making flows from the coordinative interstitial groups through the tradition "legitimators" to the originating decision-making group. This assumption would be consistent with Homans proposition pertaining to the persons of lesser rank or prestige originating interaction for those of more prestige or rank, if one focuses their attention on the responses of those in the community.

When economic development decisions are made within the geopolitical confines of the community a somewhat different linkage pattern may generally develop. In this instance economic decisions are made by some nucleus of citizens. Those individuals involved may be representing various elected positions in which such decisions are usually made, in which case the group may be characterized as a coordinative interstitial group. If the group is based upon self interest, the group may also be thought of as a coordinative interstitial groups although it is desirous of forming exchange interstitial relations within the community. In both cases these decision-making groups within the community will require legitimization; not soley from the hierarchy of the community, but broader based support for their economic decision. Thus, they will have to initiate contacts with second and third tier leaders within the community. The flow of decision-making, unlike the first case, will tend to disperse in ever increasing circles throughout the community, using the original decision-making group as the central point in a systems centered perspective. This is opposed to the first case in which the information and decision-making became more and more constricted as it processed out of the community. This second case may be one which directly contravenes the proposition of Homans as presented above. That is, more influential persons are initiating interaction with those who are of less status or rank.

In conclusion, the linkage of community decision-making will differ relative to where the economic decision-making is originating.

Footnotes

[1] James S. Coleman, "Conflicting Theories of Social Change," In Gerald Zaltman (ed.), Processes and Phenomena of Social Change (New York: John Wiley and Sons, Inc., 1973, pp. 61-75.

Amitai Etzioni, "Human Beings Are Not Very Easy to Change After All: An Unjoyful Message and its Implication for Social Programs," Saturday Review, June 3, 1972, pp. 45-47.

[2] Harold L. Nix, The Community and Its Involvement in the Study-Planning Action Process. Unpublished Manuscript (Institute of Community and Area Development and Department of Sociology, University of Georgia, Athens, 1977), p.1.

[3] Ibid.

[4] Ibid., p. 3

[5] Frederick L. Bates and A. L. Bacon, "Community as a Social System: A Theory of Community Structure," Social Forces, 1 (March, 1972), pp. 374-376; and Frederick L. Bates and Clyde C. Harvey, The Structure of Social Systems (New York: Gardner Press, 1975), pp. 180-183.

[6] Bates and Bacon, op, cit., 375.

[7] Ibid.

[8] Ibid.

[9] Ibid., p. 376.

[10] Ibid.

[11] Nix, op. cit., p. 3.

[12] Ibid.

[13] Ibid., p. 4.

[14] Ibid.

[15] Ibid.

[16] Ibid.

[17] Ibid.

[18] Ibid.

[19] Ibid., p. 6.

[20] Ibid.

[21] Ibid.

[22] Ibid.

[23] Gerald E. Klonglan, George M. Beal, Leslie D. Wilcox, Frank A. Fear, and K. Wickam Wasson, "Toward a Methodology for Social Indicators in Rural Development: Summary Report, Sociology Report 124, Department of Sociology and Anthropology, Iowa State University, Ames, Iowa, January 1976, p. 17.

[24] Ibid., p. 20.

[25] Ibid., p. 27.

[26] Ibid., p. 29.

[27] Ibid., p. 30.

[28] Ibid.

[29] Ibid.

[30] Nix, op. cit., p. 42.

[31] Bates and Harvey, op. cit., p. 208.

FOR PRESENTATION AT THE
SAAS MEETINGS IN HOUSTON

Constituencies, Clients, and Agreement in Rural Development:

A Preliminary Statement for Project S-120
(Draft)

Donald E. Voth
November 15, 1977

Introduction

This is an attempt to develop some of the concepts which are required to compare development agencies with their publics in their orientation toward development. It is designed to contribute to the achievement of one of the objectives of Southern Regional Research Project S-120, "Social Organization for Development of Low-Income Rural Counties."

This project involves, in addition to what is discussed here, the determination of significant development activities in selected low-income counties in the South, the identification of both leaders and organizations active in these development activities, an analysis of the groups or group structures implicit in inter-relationship among local leaders and explicit in the organizations which are identified, and the determination of the degree of success achieved by these groups or group structures.

The following discussion is directed specifically at the problem of organizations and their publics, how these publics can be classified and identified, and how perceptions of organizational officers and publics can be compared, and what can be inferred from such comparisons.

Objectives of S-120

Objective B of the Regional Project Statement for project S-120 is "To determine perceptions toward development of: organizational officers, members involved in development activities, agency representatives, and clientele affected by organizational and agency activities." This discussion is concerned with the identification of the ". . clientele affected by. ." and with the analysis of the perceptions held by the clientele identified.

The project statement does not develop a specific theoretical frame of reference for comparing perceptions of clientele with, for example, agency representatives, etc. Some research has been done on this and closely related questions (Nix and Seerley, 1973; Nix et al., 1974; Meiller and Broom, 1976; and Osgood, et al., 1977) both in the community development and rural development traditions and in the somewhat more developed community power and decision-making literature and the community organization literature. Some of this research is simply descriptive, e. g. priorities of leaders are compared with those of the public and differences are presented (Osgood, et al., 1977). Some focuses upon the development of organizational taxonomies (Nix and Seerley, 1973). What is needed, however, is a relatively straight-forward perspective which suggests an answer to the inevitable "so what" question when agency and public's responses are compared.

Two Perspectives

Two perspectives with profound but nearly opposite practical implications can easily be imposed upon all of this research. These will be called, simply, the "top-down", and the "bottom-up" perspectives.

The Top-Down Perspective.--This perspective sees the primary flow of power, influence, information, resources, etc. as going from a center with appropriate authority, technical expertise, etc. to the periphery, or the public.

It includes at least two important research and action traditions well known in rural sociology and rural development; diffusion of innovations, and, to some extent, leadership. Leadership is, of course, very complex, and the literature on leadership is sensitive to the need for reciprocal flows of influence. Nevertheless, the basic connotation of the term "leadership" cannot be avoided. In the same way, the diffusion of innovations literature, and the communications literature to which it is related, include the important concept of "feedback." Again, however, basic connotations of the words used imply an essentially "top-down" perspective.

From the top-down perspective differences in attitudes, opinions, or knowledge between agencies and their representatives and the public are (1) to be expected since the center plays a leadership role and should be better informed and are (2) evidence of friction or inefficiencies in the communication process. The prescription is usually additional and more effective education of the public.

The Bottom-Up Perspective.--From this perspective the primary flow of power, influence, information, resources, etc. are seen to proceed from the periphery or the public up to the center of the "responsible" agency. This perspective includes important research traditions in citizen participation and involvement (May, 1971; Mogulof, 1970a; 1970b, Spiegel, 1973) in democratic theory (Dahl, 1956, 1970) and in the community decision-making literature (Ricci, 1971). This could have been termed the "democratic" perspective and the other the "elitist" perspective, however, in some rather complex ways, thoroughly and skillfully discussed by Ricci (1971:205-215) these terms tend to confuse the issue addressed here. This perspective emphasizes popular sovereignty and tends to view the public's existing capabilities and perceptions as inviolate. The bottom-up perspective admits, of course, to reverse flows of influence. In fact, the community power and decision-making literature really has its top-down and bottom-up schools. Nevertheless, the underlying assumption of democratic theory and theory and research on community decision making is that in some, perhaps completely unspecified sense, final authority rests with the public and all organizations and agencies, both private and governmental, exist to represent and serve that public.

From the bottom-up perspective differences in attitudes, opinions, or knowledge between agencies and their representatives and the public are (1) suggestive of flaws in the operation of our pluralistic version of a democratic system,[1] (2) suggest the need for the development and improvement of the mechanisms of representation (See Pitkin, 1967; Verba and Nie, 1972; and Hansen, 1972).

What to do with Attitude Comparisons

Must we, then, select one or the other perspective and go with it, since the implications of the two are inconsistent? The good sociologist, when confronted with such a conceptual dilemma, can usually turn it into an empirical question. Perhaps the same can be done with this issue.

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[1] It might appear that this question was not relevant for private organizations. After all, who is to say what relationship should exist between private organizations and their publics? However, classical pluralist theory, in which organizations play a key role assumes that private organizations are nominally "democratic", or at least serve crucial functions of providing access.

The solution may rest in beginning to deal more specifically with agency's publics and the different types of publics agencies have. Much has been written about this in the context of organizational theory and research dealing with "open systems" and "organizational environments" (Selznick, 1949; Rogers and Agarwala-Rogers, 1976). Mayer Zald distinguishes between two types of publics that most agencies have. One is the agency's constituency and the other is the agency's clientele. The constituency, according to Zald, is ". . the groups and individuals who control the organization and to whom the agency executive or executive core is most immediately responsible--the board of directors, key legislators, officeholders, major fund-raisers or grantors." (Zald, 1970:92) Zald was discussing social work agencies. For others the examples would be quite different. Chamber of Commerce, for example, would include members as constituents. The clientele, on the other hand, is the target population or public which the agency serves or wishes to influence. Clearly, in some instances these two publics are joint, in other partially disjoint, and in others, completely disjoint.[1a]

The significance of the classification for the interpretation of opinion and attitude differences is that each public naturally falls into one of the two perspectives above. Clearly, the constituency relates to the agency according to the "bottom-up" perspective, and the clientele relates to the agency according to the "top-down" perspective. Again, both relationships will involve feedback of various kinds, but the definition of publics is largely based upon the direction of the flow of influence. Because of this the two sets of comparisons can be interpreted differently, but quite unambigously. Differences between constituency and agency are predominately to be dealt with in terms of failures in representation, differences between the agency and the clientele are to be dealt with in terms of failures of agency communication and education of the public. It is only when the two publics are completely joint that our old problem confronts us again.[2]

[1a] Warren refers to these as "input constituency" and "output constituency." (Warren, 1971:55).

We have, then, a very general frame of reference which allows for the classification of publics and for straightforward, practical treatment of comparisons of publics with agencies. Before we can proceed to the development of a methodology, however, a number of other elementary classifications need to be dealt with.

Types of Organizations in Relation to Publics

Agencies can also be divided into types. For our purposes it will be necessary, at least, to distinguish between public or governmental agencies on the one hand and private agencies on the other--because there are distinct differences in agency constituency relationships. It may also be necessary to distinguish intermediate types, but for the moment we will make only this one distinction.

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[2] This perspective leads to interesting interpretations of recent events in citizen participation. Welfare rights organizations, for example, are attempting to turn a public defined as client into a public defined as both client and constituency--generating hostility among the general tax-paying constituency. The Citizen Participation experiments of the Ford Foundation "Gray Areas" projects, which led to the Citizen Participation requirements in OEO, explored the idea that the agency-client relationship could not be effective unless ghetto youths also related to the agencies on a constituency basis, taking responsibility for policy-making. However, the definition of publics are constitutional issues, and when this was adopted by OEO it raised some still largely unrecognized constitutional questions--can a governmental bureaucracy legitimately define its constituencies?

Another very important distinction has to do with the nature of the constituencies and/or clienteles. These can be either individuals ("Grass-roots" publics) or organizations ("federated" publics), or a combination of both. These categories, together with the distinction of the two types of publics, lead to the following typology of publics that will need to be considered:

	Public Agency		Private Agency	
	Constituency	Clientele	Constituency	Clientele
Federated				
Grass-Roots				

It seems likely that not all types will actually occur at the local level. I cannot think of an example of a federated constituency of a public agency at the local level.

Methodological Issues

If some version of this schema is satisfactory, we still have to resolve several troublesome methodological issues.

Which Cells to Include in our Research.--We could, or course, restrict ourselves to looking at either constituencies or clienteles, or to only grass-roots versions of either, etc. To try to include all types of publics which are identified by the respective agencies may result in as many as four separate mini-researches for each agency, if an agency has both federated and grass-roots constituencies and clienteles.

Who can Answer the Questions?—This involves both who can respond to our instrument for determining ". . perceptions toward development. ." and who can identify an agency's publics. The question arises in those cases where a spokesperson must be selected for an agency or organization, and not, of course, where people may speak for themselves, as in the case of interviewing grass-roots constituents or clients.

In determining the relevant publics for an agency, for example, we would conceivably interview a representative of the agency, define our two types of publics, try to confirm that these types really make sense in the context of the agency, and then ask the agency representative to (1) identify each public in general and (2) provide specific elements of each public which we could interview. What biases may enter into this process? Will not an agency representative select only those specific elements of the agency's publics which are known to be "closer" to the views held by that particular representative? How can this be avoided without turning the project into a major effort in its own right?

Can Comparisons be Treated Comparatively?—A peculiar difficulty will arise in comparing differences for different agencies, especially when some agencies have primarily grass-root publics and others have primarily federated publics. It is hard to see what could be made of hypothetical data on a hypothetical question, "Is development good?", as follows:

Agency A (Grass-Roots Constituency)	Agency B (Federated Constituency)
Agency representative says "yes", and 75 percent of a sample of 20 constituents said "yes."	Agency representative says "yes" and two out of three organizational constituent representatives said "yes."

This becomes especially troublesome when it is recognized that in the final analysis, federated constituencies involve only another layer of representation and that, at some point, the constituent agencies themselves have grass-roots constituents.

Dahl, Robert
1956
A Preface to Democratic Theory. University of Chicago Press, Chicago, Illinois.

Dahl, Robert
1970
After the Revolution. Yale University Press, New Haven, Conn.

Hansen, Susan Blackall
1972
Concurrence in American Communities: The Response of Local Leaders to the Community Political Agenda. Stanford University Unpublished Doctoral Dissertation, Stanford, California.

Meiller, Larry R. and Glen M. Broom
1976
"Experiments in Community Consensus-Building: A Coorientational Analysis," paper presented at the meetings of the Association for Education in Journalism, College Park, Maryland, August 1 (Department of Agricultural Journalism, University of Wisconsin, Madison).

May, Judith V.
1971
Citizen Participation: A Review of the Literature. Institute of Governmental Affairs, University of California, Berkeley.

Mogulof, Melvin B.
1970a
Citizen Participation: A Review and Commentary on Federal Policies and Practices. The Urban Institute, Washington, D. C.

Mogulof, Melvin B.
1970b
Citizen Participation: The Local Perspective. The Urban Institute, Washington, D. C.

Nix, Harold L. and Norma R. Seerley
1973
"Comparative Views and Actions of Community Leaders and Non-Leaders," Rural Sociology, Vol. 38, pp. 427-438.

[illegible], Harold L., et al.
1974
"Views of Leader Respondents Compared with Random Respondents Views," Journal of the Community Development Society, Vol. 5, pp. 89-91.

Osgood, Mary H., et al.
1977
"Citizens and Official's Perceptions of Local Problems: Are they the Same?," Pennsylvania State University, Department of Agricultural Economics and Rural Sociology, Staff Paper Series.

Pitkin, Hannah
1967
The Concept of Representation. University of California Press, Berkeley and Los Angeles.

Ricci, David
1971
Community Power and Democratic Theory: The Logic of Political Analysis. Random House, New York.

Rogers, Everett M. and
Rekha Agarwala-Rogers
1976
Communication in Organizations. The Free Press, New York.

Selznick, Philip
1949
TVA and the Grass Roots: A Study in the Sociology of Formal Organizations. University of California Press, Berkeley.

Spiegel, Hans B. C.
1973
"Citizen Participation in Federal Programs: A Review," in Roland S. Warren (ed.), Perspectives on the American Community. Rand McNally, Chicago, pp. 365-389.

Verba, Sidney and
Norman Nie
1972
Participation in America: Political Democracy and Social Equality. Harper & Row, New York.

Zald, Mayer N.
1970
"Organizations as Polities: An Analysis of Community Organization Agencies," in Fred M. Cox, et al. (eds.), Strategies in Community Organization: A Book of Readings. F. E. Peacock, Itasca, Illinois.

Warren, Roland L., et al.
1971
"The Interaction of Community Decision Organizations: Some Conceptual Considerations and Empirical Findings," in Negandhi, Anant R., Organizational Theory in an Interorganizational Perspective. Kent, Ohio: Center for Business and Economic Research, Kent State University, pp. 53-70.

EXPANSIVE VS. NONEXPANSIVE GROWTH IN RURAL COMMUNITIES: A METHODOLOGICAL STATEMENT

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Introduction

This is a methodological statement for a study of quality-of-life variability in rural development that is predicated upon a dimension of expansive/nonexpansive ideology of community leaders. The study hypothesizes that the ideological orientation of community leaders to development affects the type of development the community experiences. If community leaders are oriented toward expansive development, the community will experience expansive development; if the leaders are nonexpansive-oriented, the community will experience nonexpansive development. To test this hypothesis, community leaders will first be classified on an ideological dimension of expansionism/nonexpansionism. Using the dimension of expansive and nonexpansive community leaders, the study will examine the effect these persons have on the type of development the community has experienced over the past ten years.

Expansive Growth and Nonexpansive Growth

Expansive growth represents development that emphasizes increases in the rate of economic growth. It represents the familiar conception of growth as industrialization based on capital-intensive technology. Accretion of per capita income, of population, of production and manufacturing, and of industrial operations, reflect an expansive growth ideology.

The concept of nonexpansive growth represents an exploration of an emerging conception in community development literature that there are alternative pathways to development (Caiden, 1974; Gross, 1966; Hamburger, 1974; Lerner, 1967; Rogers, 1975, 1976). It represents an orientation to the equality of distribution of information, and of socioeconomic benefits; to popular participation in self-development planning and execution, usually accompanied by the decentralization of some of these activities to the local level; to self reliance and independence in development, with an emphasis on the potential of local resources; and to integration of traditional with modern systems, so that modernization is a syncretization of old and new ideas (Rogers, 1976:130-1).

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Nonexpansionism is not a no-growth philosophy. Nor is nonexpansive growth non-economic. Nonexpansionism, like expansionism, is a direction of community growth comprising accretion of income and wealth. Nonexpansive growth, however, in comparison with expansive growth, is a broader concept encompassing an equal focus on development in a wide range of areas--including community living conditions, the governmental environment, the natural environment, the economic environment, public safety, and the health, education, and cultural environment. Nonexpansionism is community development oriented, and it is related to economic growth. The difference between the expansive and the nonexpansive conceptions of of development is one of scope, in that nonexpansionism considers other than strictly economic factors.

The expansive/nonexpansive dimension represents a difference of attitude toward both the means and the outcomes of development. Expansionism is an orientation to development with principal concern for increasing the amount of economic activity in the community. It is a philosophy of growth based on quantity of industrialization that is planned for and initated by community leaders for the benefit of the economic environment. Nonexpansionism is an orientation to development with a focus on equalization of distribution activated by self-directed programs initated at the local level, that can be achieved without a debunking of traditional ways of thinking and acting. With the nonexpansive orientation, primacy in development is directed toward the closing of socioeconomic gaps of lagging sectors through ground-up approaches that emphasize participation by local people (Rogers, 1976:130).

Theoretical Approach

The community development process involves organization of local people for social change. Whether social change consists of the initiation and diffusion of an innovation, the implementation of an action program designed to upgrade community services or facilities, or of a community-based project aimed at the partial or complete improvement of some problem or need, development is most often guided initially by a change agent who takes responsibility for the activation of the process, and who influences growth toward self-direction on the part of interested citizens.

Previous experience and research on the role of the change agent in the success or failure of community development program has given some guidelines relating to agent-audience interaction that are beneficial to social intervention. We know that a social intervention program should make an accurate estimate of the audience's needs within the system's norms, that the program should be compatible with the audience's past experiences, and that it should make use of opinion leaders in its implementation. The program should include some assessment of the members of the target system, and some anticipation of the consequences of the program given the above information (Rogers, 1962).

One aspect of the target system that warrants consideration in the design of a community development program is the ideological orientation of the community members to growth; and particularly, the ideological orientation of the leaders, or the elite subsystem, of the community. One such ideological orientation to growth is the expansive/nonexpansive dimension.

The predominant orientation of the community elite subsystem will determine which type of development the community experiences. The greater the subsystem is oriented toward expansive growth, the greater will be the expansive growth of the community. The same principle applies to a nonexpansive ideological predominance of the community elite subsystem.

The "predominance" of an ideological orientation to development within a community elite subsystem is more empirically applicable if it is replaced by a synonomous term--social organization for development. Social organization for development is a pattern of interaction among individuals in a group who are involved in working toward the accomplishment of some group-related, development objectives. This definition has a two-fold connotation. First, group activity for development will exhibit an identifiable pattern of interaction among group members. Secondly, this pattern of interaction can be measured on its degree of effectiveness for the accomplishment of development objectives.

Three hypotheses will be tested:

1. Among communities, the greater the social organization for development among expansive leaders, the greater the expansive development.

2. Among communities, the greater the social organization for development among nonexpansive leaders, the greater the nonexpansive development.

3. Among communities, the greater the expansive/nonexpansive homogeneity of social organization for development within the elite subsystem, the greater the predictability of expansive or nonexpansive development.

Hypotheses 1. and 2. are testing for the effect of a well-organized clique of expansive or nonexpansive leaders on the type of development the community experiences. It is important to realize, however, that such a clique could be an isolated, and somewhat incidental, group within a broader community elite subsystem that is oriented toward a different type of development. So, Hypothesis 3. will test for the effect of homogeneity on social organization for development within a community elite subsystem on development outcomes.

The expansive orientation to growth is the dominant paradigm of development. Most need-evaluation studies will find expansive growth in the forefront of the community's objectives. The orientation of nonexpansive growth is proposed because not all communities are expansive oriented, nor are all expansive-oriented communities homogeneous on this axis. For maximum benefit of community-development program design and implementation, social change agents should consider the expansive/nonexpansive dimension of ideological orientation among the community elite subsystem. Therefore, change agents should first make sure they are not trying to initiate an expansive growth program into an inherently unreceptive community.

Methodological Approach

The data to be used in testing for the viability of an expansive/nonexpansive dimension of community development will be from the S-120 Regional Research Project: "Social Organization for Development." In S-120, information from the respondents on their formal and/or informal contacts regarding decision making in some specified area of development was compiled in matrix format so as to provide a basis for an analysis of their patterns of interaction. Information was also collected from respondents on their views of the community's advantages and disadvantages, on their organizational memberships, and on some of their personal characteristics.

The approach to the study comprises a four step procedure. In the first step, community leaders will be classified as having either an expansive or nonexpansive ideological orientation to development. The second step involves the integration of these leaders into proposed expansive/nonexpansive development-oriented groups. The third step of the procedure will be to measure the social organization for development of each proposed group. The final step will be the classification of communities on expansive and nonexpansive development. This approach will lead to an analysis of a threshold effect of the number and influence of each of the two types of leaders on the type of development (expansive or nonexpansive) the community has experienced over the past ten years.

Step 1. The members of the communities in this study will be represented by a community elite subsystem. This subsystem consists of those leaders identified as being most influential for the development of the community based on a reputational approach similar to that developed by Hunter (1953). The community elite subsystem will be divided into two groups--a group of expansive leaders, and a group of nonexpansive leaders. These persons will be identified as being of either expansive or nonexpansive ideological orientation based on their responses to the question, "What do you think are the three most important problems or needs of the community?" In addition to their responses to this question, information on their ranking of the three responses according to importance will be used for the assessment of their ideological orientation to growth.

Step 2. The next step in the approach proposes that leaders classified as either expansive or nonexpansive are organized into groups oriented to development consistent with their ideologies. This proposal, first of all, assumes that leaders identified as expansive or nonexpansive form an organized group with shared norms and development objectives. The second assumption is that the overall development of the community will be oriented toward either expansive or nonexpansive growth as a function of the success of each group in gaining development objectives consistent with their ideologies. That is, the more successful the group of expansive leaders for development, the greater the expansive development. The development the community experiences over time should be nonexpansive for greater success of nonexpansive leaders.

Step 3. Social organization for development is a construct incorporating a combination of two concepts--centrality and influence. "Centrality designates how close a member is to the 'center' of the group's interactive network, and thus refers simultaneously to the frequency with which a member particpates in interaction with other members, and to the number and range of the other members with whom he/she interacts" (Hopkins, 1964:28). The more contacts a person makes within a group, the more involved or "central" that person is within the interactive network of the group. The social organization of a group will be derived in part from a procedure that anatomizes the centrality of all the individuals within the group's interactive network.

Influence is an individual's potential to effect the outcomes of others (Minton, 1972:102). The basis of influence is others' perception of the individual's ability to effect outcomes. The addition of influence to the construct of social organization for development takes into account variability in the success of a leader in guiding community development toward his/her ideology, based on the influence this person has relative to the other leaders.

Centrality and influence are distinct indicators of an individual's relative position in a group. Centrality indicates how involved an individual is within the interaction network of the group. The influence of an individual is a nominalist conception of the effect of his/her actions on others. By combining the two concepts of centrality and influence, we will have an indication of the impact on others--the primacy of each individual.

In considering the primacy of an individual, the concepts of centrality and influence should each be measured separately. The measures for each, then, should not overlap. Support for this position is offered by Bonjean (1963, 1964). Bonjean has described four, different, primary types of leaders: the visable leader, who holds both position and influence; the positional leader, who holds occupational position, but does not hold influence; the concealed leader, who holds influence, but not position; and the activist, who holds neither position nor influence. In devising a measure for influence, we should consider all four of these leaders. If influence is measured based on an additive score of number of contacts (whether these contacts are weighted for frequency or not), the activist, who holds little influence, but makes many contacts, will be incorrectly rated as being influential. There is a need for measures of centrality and influence that are not associated with each other.

Centrality will be measured by using smallest space analysis of the interaction network of community leaders (Laumann, 1976). Smallest space analysis takes into account the least path distances for a contact matrix of individuals. A path distance is the minimum number of directed lines (communication flow) that must be traversed in order to reach a second point (individual) from the first. An individual's centrality score will be an assigned number ranging from one to four dependent upon the region of the two-dimensional representation of the interaction matrix that person is placed using smallest space analysis. Each representation has four equi-distant regions: the central; the first periphery; the second periphery; and the area outside the circular representation. For purposes of coding, the central region will be assigned a value of four, with each less centrally-placed region receiving its appropriate value proceeding to the outside area.

The operationalization of influence to be used here is a combined score of two separate measures--recall rank and summary rank. Recall rank is based on the assumption that in cases of reciprocal recall of contacts between two individuals, the individual recalling the greatest number of contacts will be of lower relative status (Miller, 1976:6). This measure will be an additive score for each individual of a positive, real number obtained by coding the frequency of contact reported by another person to the numerator of a fraction, and the frequency of contact with that other person reported by the individual to the denominator of the fraction. For example, consider individuals A and B. These persons can report a frequency of contact with each other as being: 1. ("occasionally"); 2. ("monthly"); 3. ("weekly"); 4. ("several times weekly"); and so on. Suppose the frequency of contact with individual A reported by person B is 3. ("weekly"). Suppose also that the frequency of contact with B reported by A is 4. ("several times weekly"). In computing the recall rank for A, this individual's score from person B would be 3/4. The total recall rank for A would be the addition of similarly coded fractions for each other person in the group reporting interaction with A.

The "break-even" fraction computed for an individual in contact with another person is 1/1 (reduced)--where both individuals report equal frequency of contact with each other. The greater the difference in reported frequency of contact between two individuals, the greater the difference in influence between them. Correspondingly, the more fractions above 1/1 coded for an individual in a group, the greater the relative influence of that individual.

Recall rank gets directly at the concept of deferential influence based on differences in recalled contacts; because it measures influence based on differences in recall, rather than on total number of contacts. Therefore, it is less susceptible to inaccuracies from inflation of low influentials who have many contacts within the group. The activist, for example, will record a large number of fractions in the group interaction matrix using recall rank. However, each score will act to "increase" the influence of the person he/she contacts, while "decreasing" his/her own influence. A highly uninfluential person with many contacts will not be able to score high on recall rank if he/she is not recalled by others (0/x = 0). Finally, it is important to note that the recall-rank measure of influence will contain inaccuracies if influential leaders are highly inactive; while at the same time, each one recalls contact with a person of low influence--the addition of many small fractions for the low-influential person, with only one or two scores for a high-influential, will inaccurately inflate the recall rank of the low-influence activist.

The second measure of influence is the summary rank measure (McCann, 1977:4). The summary rank measure codes each individual in the group as having the potential for receiving a rank of 1. ("most influence"), 2. ("second most influence"), or 3. ("third most influence"), from each of the individuals interviewed. The summary rank for each individual is constructed by inverting the rank this person receives. That is, score each rank of 1. received from others as 3.; score each rank of 2. received as 2.; and score each rank of 3. received as 1. The summary rank for an individual is the sum of all the scores received from others (or that is self-assigned). The possible range for this measure depends on the number of individuals interviewed and the ranks given by each. In the hypothetical case of a total of 40 individuals interviewed, each ranking person A, for example, as 1. ("most influence"), the summary rank measure would be 40 x 3 = 120.[1]

[1] Influence Measure 3. (McCann, 1977:1) rates influence from implied deference based on direction of contact. This measure has good intuitive appeal. However, since we have not yet found research showing that the person who initiates contacts more often is of lower relative status, we have not incorporated it into the combined measure of influence used here.

In this study, the recall rank measure and the summary rank measure will be combined to give an influence score for each individual. It is difficult to theorize as to which measure is more indicative of influence. The recall rank measure denotes influence through implied deference based on differences in recalled frequency of contacts between two individuals. The summary rank measure, as McCann (1977:4) states, "clearly has [good] face validity regarding the matter of influence because it is generated by the question, 'Would you now select and rank the three among the individuals named, that you think have the most influence.'" The simplest way to combine the two measures would be to give equal weight to each one.

In order to combine recall rank and summary rank, the scores for each must first be standardized. This step will be accomplished by setting the highest score for each measure as an upper limit (on a scale of 0 - 10.00), with the scores for each of the other individuals in the group being a ratio score relative to the upper limit. For example, if individuals A, B, and C have scores of 7.50, 6.00, and 5.00 (for the recall rank or summary rank measure), their scores would be standardized as 10.00, 8.00, and 6.67 respectively. This procedure is theoretically exact because influence is being measured relative to the group. It is empirically exact because the scores for each measure are standardized on a ratio scale, which gives each individual a numerical score that corresponds to his/her relative influence. Once both measures have been computed, the influence rank for each individual will be equal to the addition of the two (standardized) scores.

The influence score multiplied by the centrality score will yield a score that indicates the primacy of each individual. To obtain a score for the social organization for development of a group of expansive or nonexpansive leaders within the community elite subsystem, the primacy score for each expansive/nonexpansive individual will be added. Therefore, the larger the social organization score for expansive leaders, the greater the social organization for expansive development in the community. The greater the social organization score for nonexpansive leaders, the greater the social organization for nonexpansive development in the community.

Step 4. The classification of communities on expansive and nonexpansive growth will use a macro-level approach of compiling data from six different indexes of development. For each community, growth will be measured on indexes of: community living conditions (measured by population distribution, housing characteristics, health, education, employment rates, and welfare); the governmental environment (measured by the number of persons voting, educational expenditures, and expenditures per capita for public facilities); the natural environment (measured by climate-related factors); the economic environment (measured by the value of construction, the value of manufacturing added, total bank deposits, per capita income, and savings per capita); public safety (measured by the crime index rate, number of violent crimes, number of property crimes, and the number of full-time law enforcement officers per capita); and the health, education, and cultural environment (measured by the number of physicians per capita, the number of dentists per capita, hospital beds per capita, newspaper circulation per capita, and the number of persons per commercial broadcasting station). A score for nonexpansive growth will be derived using Liu's (1976) regression equation for quality-of-life development, which is based on the six indexes listed above. A score for expansive growth will be derived using a similar equation that is limited to economic indicators of the community. The algebraic difference in the scores for expansive and nonexpansive community development will yield a single score for a community that will indicate its orientation to growth. The greater this score, the more the community is oriented toward expansive development; the less this score, the more the community is oriented toward nonexpansive development.

The Analysis

The study will test for a relationship between expansive/nonexpansive social organization for development, and the type of development the community has experienced over a ten year period. The test will be evaluated based on a rank-order correlation measure (Spearman's r) between social organization and community development.

Theorem 1. Among communities, the greater the social organization for development, the greater the development.

Hypothesis 1. Among communities, the greater the social organization for development among expansive leaders, the greater the expansive development.

This hypothesis will be tested by, first, ranking the communities on their orientation to development. Then, each community will be ranked on its degree of expansive social organization for development. This will be based on a procedure that measures social organization for expansive development discrete from the social organization for nonexpansive development. Using a separate smallest space analysis of centrality accounting for influence, the social organization for each group will be computed. Then, the social organization for development of the nonexpansive group will be subtracted from the social organization for development of the expansive group in the community elite subsystem. The score for the social organization of expansives has been computed in this manner so as to allow for the possibility of an isolated, but well-organized, clique of nonexpansive leaders, which could positively affect the nonexpansive development of the community. Hypothesis 1. will be evaluated based on the size of the rank-order correlation coefficient between expansive community development, and the social organization for development of expansive leaders.

Hypothesis 2. Among communities, the greater the social organization for development among nonexpansive leaders, the greater the nonexpansive development.

This hypothesis will be tested and evaluated using the same approach as was used to test the first hypothesis.

Hypothesis 3. Among communities, the greater the expansive/nonexpansive homogeneity of social organization for development within the elite subsystem, the greater the predictability of expansive or nonexpansive development.

The thesis for Hypothesis 3. is that the more homogeneous a community elite subsystem is toward either expansive or nonexpansive development, the greater the predictability of expansive or nonexpansive development in the community. In other words, the greater the community elite subsystem is organized for expansive or nonexpansive development, the greater will be that type of development in the community.

The evaluation of Hypothesis 3. will require a score for the homogeneity of orientation to development for each commmunity elite subsystem. This can be reduced to obtaining a measure for each elite subsystem on its social organization for development. The measurement of a subsystem on social organization for development will involve a two step procedure. First, the primacy of each leader in the elite subsystem will be coded as expansive or nonexpansive. This will be accomplished by multiplying the primacy score of expansive leaders by a factor of +1. The primacy of nonexpansive leaders will be multiplied by a factor of -1. In the second step, the coded primacy score for each leader in the elite subsystem will be added. This will yield a measure for the social organization for development of a community elite subsystem that is coded on a dimension of expansive/nonexpansive ideological orientation to growth. The reason this measure yields a different score from those obtained for a group of expansive or nonexpansive leaders after the separation of the other group from the subsystem (in testing for Hypotheses 1. and 2.), is because the method does not take into account isolated cliques of well-organized expansive or nonexpansive leaders, but considers the overall social organization of the community elite subsystem composed of positively and negatively coded leaders. Here, the smallest space analysis of centrality accounting for influence is computed for all the leaders at once; while in order to account for expansive/nonexpansive homogeneity, the leaders have been coded with positive and negative scores for their primacy in the community elite subsystem.

Hypothesis 3. will be evaluated based on the size of the rank-order correlation coefficient between communities ranked on their orientation to development, and community elite subsystems ranked on social organization for development. Since expansive leaders have been coded with positive primacy scores, and the primacy scores of nonexpansive leaders have been coded as negative, the greater the social organization for development of the community elite subsystem, the greater should be the expansive development of the community. Similarly, the less the score for social organization for development of the community elite subsystem, the greater should be the nonexpansive development of the community.

References

Bonjean, Charles M.
1963 Community Leadership: A Case Study and Conceptual Refinement. American Journal of Sociology 68: 672-81.

1964 Class, Status, and Power Reputation. Sociology and Social Research 49:69-75.

Caiden, Naomi and Aaron Wildavsky
1974 Planning and Budjeting in Poor Countries. New York: Wiley.

Gross, Bertram M.
1966 The State of the Nation: Social Systems Accounting, in Raymond A. Bauer, Social Indicators. Cambridge, Ma: MIT Press.

Hamburger, Polia Lerner
1974 Social Indicators--A Marketing Perspective. Chicago: American Marketing Association.

Hopkins, Terence A.
1964 The Exercise of Influence in Small Groups. Totowa, NJ: The Bedminister Press.

Hunter, Floyd
1953 Community Power Structure. New York: Doubleday.

Laumann, Edward O., and Franz U. Pappi
1976 Networks of Collective Action. New York: Academic.

Lerner, Daniel, and Wilbur Schramm (eds.)
1967 Developing Countries. Honolulu: East-West Center Press.

Liu, Ben-Chieh
1975 Quality of Life in the U.S. Metropolitan Areas. Washington, DC: U.S. Environmental Protection Agency.

McCann, Glenn C.
1977 October 28, Memorandum to S-120 Colleagues.

Miller, H. Max
1976 Method of Establishing Relevant Organizational Structures Related to Decision-Making for the Purpose of Development in Rural Areas. unpublished paper.

Minton, Henry L.
1972 Power and Personality, in James T. Tedeschi, The Social Influence Processes. New York: Aldine.

Rogers, Everett
1962 Diffussion and Innovations. New York: Free Press.

1975 The Anthropology of Modernization and the Modernization of Anthropology. Reviews in Anthropology 2: 345-58.

1976 Communication and Development. Beverly Hills, Ca: Sage.

SUPPORT FOR INDUSTRIALIZATION AS A MEANS TO RURAL DEVELOPMENT

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INTRODUCTION

The terms, community development and rural development, in theory vary in definition, but in practice are commonly accepted as desirable and useful. Definitional criteria for development include improvement in the quality of life for inhabitants of the given geographic areas. Social and economic indicators, particularly occupational opportunities, education, and personal and family income, are given high priority. In the past, scholars and practitioners have emphasized improvement of occupational opportunities, viz., the addition of new jobs. This often meant that a new employing firm or firms were brought into the rural community. Social scientists, development practitioners, and local residents seemed to agree that this was right and proper. The seemingly logical assumption was, that as rural farm population declined, employment must be created to maintain the rural population (Cavender and Schmitt, 1971).

Only those marching to a different drummer -- a few artists, environmentalists, and Jeffersonian agrarians -- questioned these trends. Occasionally, social scientists raised their voices but were decisively labeled as conservative or belonging to one or more of the above three categories. Consequently, little research has been conducted to determine the costs and benefits of rural industrialization, and only recently have agricultural economists extended their expertise to this endeavor (Shaffer and Tweeten, 1974).

Rural sociologists have considered this topic (cf., Bertrand and Osborne, 1960; Sizer and Clifford, 1966), but the substantial contributions have been provided by Gene F. Summers and his associates (see REFERENCES), who postulated that rural industrialization may not benefit (economic, social, cultural, ecological, political) rural areas. These researchers, at the University of Wisconsin, received a grant from the Economic Development Administration, U.S. Department of Commerce, to conduct research on this topic, which was completed in 1975. A very brief summary of this project follows:

One purpose of the research was to synthesize studies of industrialization in rural areas. One hundred such studies were examined, representing the construction of 700 manufacturing plants, at 245 locations, in 34 states, between the years of 1945 and 1973. An overview of this synthesis:

(a) There is no evidence that industrial development increases the level of educational attainment in the host community. Where it does occur the evidence suggests it is due to changes in the age structure because younger adults generally have completed more years of schooling.

(b) New jobs often do not go to the local unemployed, underemployed, minorities and marginally employable persons likely to be near or below the poverty level.

(c) High-skill, high-wage industries which are most likely to increase the aggregate income and raise the percentage of families above the poverty level, are least likely to hire local disadvantaged. Low-skill, low-wage industries are more likely to employ the disadvantaged.

(d) Industrial firms often are offered inducements by the local community to encourage their choice of the community as a plant site.

(e) Increase in the fiscal resource base of the local community often is outweighed by increased costs of providing services to the new industry and the community.

(f) Net fiscal gains to the local government do occur. This usually is when a) no local subsidy was offered the industry, b) the plant work force is hired locally, or c) large proportions of the plant work force live outside the community and commute to work.

(g) Where new industry is accompanied by population growth it often strains existing basic delivery systems. Anticipated benefits to the local community generally exceed perceived benefits after development.

Policy recommendations were required as part of the United States Department of Commerce funding. An overview of the recommendations:

(1) Low-skill, low-wage industries should be encouraged to locate communities (areas) with a surplus of low-skill labor. This is viewed as a first stage of development to be followed by high-skill, high-wage industry. Where surplus labor is highly skilled as well, the two stages might well be executed simultaneously.

(2) Strain on a community's public services may be minimized by attracting a plant of suitable size; i.e., either one that makes few demands on existing facilities such as medical, police, and fire services, or one which is large enough to provide these for itself.

(3) A comprehensive labor survey in the early planning stages of location may help match supply and demand, The size, and skill levels of potential male and female employees should be documented.

(4) Firms locating in rural areas should be encouraged to subsidize unskilled and minority training programs, especially where a labor survey has shown a large potential supply of unskilled, racial minorities, and women.

(5) Since many rural industrial workers have young children, provision of schools and other child-oriented services such as day care centers are important. Assistance may be required to establish and expand these facilities in order to attract skilled workers and utilize local female labor.

(6) The pattern of population growth and residential location associated with industrial development in non-metropolitan areas is certain to exacerbate the taxation of agricultural land and further weaken the economic viability of farm enterprises. Hence, it is recommended that a national land use policy which safeguards the future of agricultural land be established.

The authors do not wish to imply that all employment opportunities and population growth in rural areas are bad. Employment, in association with the cultural and physical environmental assimilative capacities of given rural areas, may be desirable. People are relatively free to live where they choose in our society. Those persons desiring to live in rural areas, and possess the economic resources, should have the opportunity to do so. The issue explored here is one of knowledge; rural counties and communities do not know the consequences (particularly economic) of rural industrialization.

METHODOLOGY

The counties included in the research reported here (Kershaw, Union, Williamsburg) are study counties for the southern regional project S-120, Social Organization for the Development of Rural Counties. These counties were selected from criteria established by previous regional projects and centering on rural poverty indicators, and from criteria suggested by the South Carolina Cooperative Extension Service programs.

Respondents were selected by supervenient procedures. First, a list of positional community and county officials and leaders was prepared, utilizing regional project guidelines. The County Extension Leader (formal title) was consulted in generating this list. These leaders and officials were then asked to name individuals they felt to be involved and influential in three areas of concern: economic development, health facilities and services, and a specific and relevant issue or problem in each county.

Upon completion of this procedure, names which were mentioned more than twice by these respondents, were placed on a respondent list for each county. This list provided the names of those to be interviewed using the regional project questionnaire. In addition to the original names on the list, persons who were mentioned and ranked by the venial respondents, were also included in the sample to be interviewed.

Social scientists at Clemson University interviewed respondents in the three counties, July-December, 1977. Data are currently available for the following number of respondents from each county: Kershaw - 42, Union - 34, and Williamsburg - 22.

Responses to the following questions are used to derive direct support for industrialization as a means to rural development:

> "Would you please tell me what you think are three aspects of your County which you especially like?"

"What do you think are the most important needs or problems of your County?", and

"What does the term 'development' mean to you?"

Respondents ranked their answers to the first two questions, with respect to their importance, as well.

Responses mentioning industrialization, the lack or excess of it, and favorable or unfavorable connotations of it, (relative to each question), are coded either "no listing", or by their rank--whichever is applicable. For the question concerning "development", responses are coded as "no listing", mentioning industrialization singly, in conjunction with another or other items, or with an unfavorable connotation. Categories are considered mutually exclusive.

Indicators of indirect support for rural industrialization are tabulated from actual frequencies in response to questions concerning the number of organizations or agencies involved in the areas of our concern for each county. Additionally, actual frequencies of contacts that respondents maintain relative to their decisions concerning economic development, health development, and special interest areas are recorded. It is suggested that the greater the organization and contact frequencies in the economic development area (relative to other areas), then the greater is support for industrialization as a means to rural development.

Discussion of frequencies and percentages of data from the three counties follow. It is emphasized that objectives of the larger research project were not to determine support or lack of support for rural industrialization. Nevertheless, the authors believe that data from the survey research are useful for a preliminary investigation of this topic.

FINDINGS

Responses to the survey questions are presented in Appendix Tables 1 through 10. The questionnaire item most closely associated with the topic of this paper is that eliciting a definition of development. Response to this item will be discussed first (see Table 1). About one-half of the respondents do not (specifically) list industrial employing firms. The remaining responses do reveal a direct association with industrialization. One third of the respondents state industrialization and at least one additional definitional component for development. These findings indicate some but not overwhelming support for industrialization as a means to rural development.

Data from responses regarding favorable aspects of the respective counties are presented in Table 2. Considering aspects of the county that the respondents like, 90.8 percent do not state industry, employing firms, or equivalent responses. The respondents listing industry for this question are divided equally into ranks with three responses in each category.

Responses mentioning the need for, or lack of industry in the county, as one of the most important problems of the county, are presented in Table 3. While 64.3 percent of the respondents fail to perceive this as a problem, 19.4 feel it to be the most important problem in the county, 10.2 percent rank industrialization as second, and 6.1 percent as the third most important problem in the county. Table 4 reveals that only nine respondents believe that overdependence on industrialization is a problem in the county. Hence, the small percentage of respondents opposing industrialization certainly does not indicate a lack of support.

The authors have suggested that magnitude of organizations and individuals with whom respondents associate, may constitute indirect indicators of support for industrialization. Numbers of organizations, which are listed by respondents, for economic development, health, and specific issues, are presented in Table 5, Table 6, and Table 7, respectively. When comparing the organizations listed, those associated with health appear to be most dominant in the thoughts of the respondents. The median number of organizations listed per respondent for the three topics are: economic - 2.59; health - 2.98; and specific issues - 1.62.

Numbers of individuals, listed by respondents, for economic development, health, and specific issues, are presented in Table 8, Table 9, and Table 10, respectively. When respondents thought of associating with individuals, economic development was clearly most viable. The median number of individuals listed per respondent for the three topics are: economic - 7.90; health - 3.30; and specific issues - 3.42. Rural industrialization appears to be discussed in the social interaction of county influentials and leaders. Such interaction includes a wide range of inter-personal association, but is probably concentrated in occupational pursuits, formal associations, organizations, and agencies.

These results (interaction with individuals about economic development) suggest that rural industrialization is simply assumed to be important by influentials and leaders in rural counties. Thus, it may not be stated as a definitional component of development, as a favorable aspect of the county, or lack of development thought of as an unfavorable aspect.

Three South Carolina Counties

Data are tabulated for the three South Carolina counties included in this research. A very brief profile of each county will be presented in order to set the stage for further discussion. Kershaw County has respectable composite socio-economic indicators but pockets of rural poverty exist. The economic base includes substantial industrial, agricultural, and forest products sources. The industry is essentially post World War II.

Union County is in a traditional textile mill area and also has a forest products economic base. The socio-economic indicators are better than Williamsburg but poorer than Kershaw.

Williamsburg County is the most agricultural and rural of the three. There is some forestry and industrialization in the county, the latter being a relatively recent phenomenon.

Data by County

With respect to the responses regarding a defintion for development (Table 1), respondents from Kershaw are more likely to include industrialization in their definitions. A total of 61.9 percent of Kershaw County influentials and leaders include some aspect of industrialization in their definitions. Kershaw respondents are also more likely to list and rank industrialization as a favorable aspect of the county (Table 2). It is suggested that industrialization of the past thirty years, resulting in socio-economic improvement, may also contribute to further support for rural industrialization.

Respondents from Union County are more likely to consider both industrialization and lack of industrialization (more emphasis on the latter) as unfavorable aspects of their county (Table 3 and 4). It is apparent that some respondents do not favor dependence on the somewhat dilapidated textile industry. It is not clear whether respondents favor a diversification of employing firms or more modern textile industry. At any rate, only a few individuals support rural industrialization in such a county.

The organizations listed by respondents from the three counties, for economic development, are listed in Table 5. There is some tendency for Kershaw and Williamsburg respondents to list greater numbers of organizations. It appears that a more recent history of industrial development results in greater social organizational involvement. Union County, with textile dependence, appears to have a few concerned organizations.

Numbers of individuals listed by respondents from the three counties, for economic development, are presented in Table 8. Williamsburg County respondents are more likely to interact with many (i.e., more than nine) individuals about economic development. It appears that recent efforts toward rural industrialization result in substantial conversation about the topic, if not support for it. Union County respondents, again with textile dependence, appear to be avoiding conversation about the issue.

IMPLICATIONS

Historically, scholars, practitioners, and local influentials and leaders have favored rural industrialization as a means to rural development. Recently, this policy direction has been questioned (see references on page 9). Summers and his associates concluded that rural areas do not benefit from rural industrialization. The purpose of this paper is to determine the degree of support for rural industrialization, from influentials and leaders in three South Carolina counties. To reiterate, the purposes of the survey research was not to test this hypothesis; consequently, answers to the question at hand are but preliminary.

About one-half of the respondents list some aspect of industrialization in their definitions of development. Respondents from the county with highest socio-economic indicators and industrialized since World War II, are more likely to respond in this manner. A total of 35.7 percent of all respondents believe that lack of industry is a problem and 19.4 percent believe it to be the most serious problem in the country.

Kershaw County has a balanced economic base, industrial employing firms around its incorporated places, and respectable socio-economic indicators. The authors of this manuscript suggest that rural industrialization may not be needed in this county. There is, nevertheless, substantial direct support for rural industrialization in Kershaw County. It is concluded that recent and diversified industrialization has contributed to support for additional industrialization in this rural county.

Williamsburg County has an agricultural economic base but poverty has resulted, in part, from declining demand for farm labor. Selective rural industrialization would, perhaps, be appropriate for this county, and substantial interactional and organizational support exists for industrialization. Direct support is rather weak in this county, however.

Union County has a forest products and textile manufacturing economic base. If rural industrialization is appropriate for any county, it would be this county. However, support, both direct and indirect, for rural industrialization, is meager in Union County.

The authors believe that a general indication of support for rural industrialization has been determined from the methodology and survey research reported here. It is also useful to report variation in response from the three respective counties.

REFERENCES

Bertrand, Alvin L., and Harold Osborne
1960 "Rural Industrialization: A Situational Analysis." Rural Sociology 25 (February): 387-392.

Cavender, G.W.F., and Richard G. Schmitt, Jr.
1971 "How a Town can Attract Industry." Agricultural Yearbook, 1971. Washington, D.C.: U.S. Government Printing Office.

Shaffer, Ronald, and Luther Tweeten
1974 "Measuring Net Economic Changes from Rural Industrial Development in Oklahoma." Land Economics 50 (August): 261-270.

Sizer, Leonard, and William B. Clifford
1966 Rural Industrialization. Morgantown: West Virginia University Agricultural Experiment Station, Bulletin 521 (March).

Summers, Gene F.
1973 Large Industry in a Rural Area: Demographic, Economic, and Social Impacts. Final Report to the Office of Economic Research, Economic Development Administration. Madison: University of Wisconsin, Department of Rural Sociology, Working Paper Number RID 73.19 (September).

Summers, Gene F., Sharon Evans, Frank Clemente, Elwood M. Beck, and Jon Minkoff
1976 Industrial Invasion of Nonmetropolitan America: A Quarter Century of Experience. New York: Praeger Publishers.

Summers, Gene F. and Frank Clemente
1976 "Industrial Development, Income Distribution and Public Policy." Rural Sociology 41 (2): 248-268.

APPENDIX

Table 1. Respondents' Definition of Development by County: Industrialization or Equivalent and No Listing of Industrialization

County		No Listing	Only Industry	Industry & Other Response	Industry Unfavorable Connotation	Total
Kershaw	#	16	2	19	5	42
	%	38.1	4.8	45.2	11.9	42.9
Union	#	22	3	9	0	34
	%	64.7	8.8	26.5	0.0	34.7
Williamsburg	#	13	4	5	0	22
	%	59.1	18.2	22.7	0.0	22.4
	#	51	9	33	5	98
Total	%	52.0	9.2	33.7	5.1	100.0

able 2. Favorable Attributes of Respondents' Counties: Industrialization or Equivalent and No Listing of Industrialization

		No	Rank			
ounty		Listing	1	2	3	Total
ershaw	#	35	3	2	2	42
	%	83.3	7.1	4.8	4.8	42.9
nion	#	32	0	1	1	34
	%	94.1	0.0	2.9	2.9	34.7
illiamsburg	#	22	0	0	0	22
	%	100.0	0.0	0.0	0.0	22.4
	#	89	3	3	3	98
otal	%	90.7	3.1	3.1	3.1	100.0

Table 3. Unfavorable Attributes of Respondents' Counties: Lack of Industrialization and No listing

		No	Rank			
County		Listing	1	2	3	Total
Kershaw	#	34	3	2	3	42
	%	81.0	7.1	4.8	7.1	42.9
Union	#	13	12	7	2	34
	%	38.2	35.3	20.6	5.9	34.7
Williamsburg	#	16	4	1	1	22
	%	72.7	18.2	4.5	4.5	22.4
	#	63	19	10	6	98
Total	%	64.3	19.4	10.2	6.1	100.0

Table 4. Unfavorable Attributes of Respondents' Counties: Industrialization or Equivalent and No Listing

		No	Rank			
County		Listing	1	2	3	Total
Kershaw	#	41	1	0	0	42
	%	97.6	2.4	0.0	0.0	42.9
Union	#	26	6	2	0	34
	%	76.5	17.6	5.9	0.0	34.7
Williamsburg	#	22	0	0	0	22
	%	100.0	0.0	0.0	0.0	22.4
	#	89	7	2	0	98
Total	%	90.0	7.1	2.0	0.0	100.0

Table 5. Number of Organizations Listed for Economic Development by County

County		None	1	2	3	4	5-7	Total
Kershaw	#	2	5	9	11	11	4	42
	%	4.8	11.9	21.4	26.2	26.2	9.5	42.9
Union	#	1	10	9	8	6	0	34
	%	2.9	29.4	26.5	23.5	17.6	0.0	34.7
Williamsburg	#	1	3	7	3	3	5	22
	%	4.5	13.6	31.8	13.6	13.6	22.7	22.4
	#	4	18	25	22	20	9	98
Total	%	4.1	18.4	25.5	22.4	20.4	9.2	100.0

Table 6. Number of Organizations Listed for Health by County

County		None	1	2	3	4	5-8	Total
Kershaw	#	1	1	8	10	13	9	42
	%	2.4	2.4	19.0	23.8	31.0	21.4	42.9
Union	#	4	7	5	10	5	3	34
	%	11.8	20.6	14.7	29.4	14.7	8.8	34.7
Williamsburg	#	5	1	5	5	4	2	22
	%	22.7	4.5	22.7	22.7	18.2	9.1	22.4
	#	10	9	18	25	22	14	98
Total	%	10.2	9.2	18.4	25.5	22.4	14.3	100.0

Table 7. Number of Organizations Listed for Specific Issue or Topic by County

County		None	1	2	3	4	5-6	Total
Kershaw	#	8	4	16	5	5	4	42
	%	19.0	9.5	38.1	11.9	11.9	9.5	42.9
Union	#	8	11	6	3	4	2	34
	%	23.5	32.4	17.6	8.8	11.8	5.9	34.7
Williamsburg	#	9	6	3	0	0	4	22
	%	40.9	27.3	13.6	0.0	0.0	18.2	22.4
	#	25	21	25	8	9	10	98
Total	%	25.5	21.4	25.5	8.2	9.2	10.2	100.0

Table 8. Number of Individual Contacts for Economic Development by County

County		None	1-4	5-8	9-12	13-18	19-35	Total
Kershaw	#	5	12	12	9	2	2	42
	%	11.9	28.6	28.6	21.4	4.8	4.8	42.9
Union	#	9	4	5	3	9	4	34
	%	26.5	11.8	14.7	8.8	26.5	11.8	34.7
Williamsburg	#	2	1	2	5	2	10	32
	%	9.1	4.5	9.1	22.7	9.1	45.5	22.4
	#	16	17	19.	17	13	16	98
Total	%	16.3	17.3	19.5	17.3	13.3	16.3	100.0

Table 9. Number of Individual Contacts for Health by County

County		None	1-4	5-8	9-12	13-18	19-35	Total
Kershaw	#	14	20	7	1	0	0	42
	%	33.3	47.6	16.7	2.4	0.0	0.0	42.9
Union	#	4	13	9	6	0	2	34
	%	11.8	38.2	26.5	17.6	0.0	5.9	34.7
Williamsburg	#	1	11	3	4	2	1	22
	%	4.5	50.0	13.6	18.2	9.1	4.5	22.4
	#	19	44	19	11	2	3	98
Total	%	19.4	44.9	19.4	11.2	2.0	3.1	100.0

Table 10. Number of Individual Contacts for Specific Issue or Topic by County

County		None	1-4	5-8	9-12	13-18	19-35	Total
Kershaw	#	14	18	7	3	0	0	42
	%	33.3	42.9	16.7	7.1	0.0	0.0	42.9
Union	#	8	3	5	4	9	5	34.7
	%	23.5	8.8	14.7	11.8	26.5	14.7	34.7
Williamsburg	#	4	7	5	3	2	1	22
	%	18.2	31.8	22.7	13.6	9.1	4.5	22.4
	#	26	28	17	10	11	6	98
Total	%	26.5	28.7	17.3	10.2	11.2	6.1	100.0

Section Q

1. A Brief History of the Rural Sociology Section
2. Operating Procedures for the Rural Sociology Section
3. Minutes of the 1977 and 1978 Annual Meetings

BRIEF SECTION HISTORY

C. L. Cleland

With the inclusion of the minutes of the meeting of the Rural Sociology Section of the SAAS in the present Proceedings, it was suggested that it might be appropriate to add a brief history of the development of the section. The following is based on notes made in preparation for the 1968 meeting of the section, the report edited by John E. Dunkelberger and Janice E. Vanlandingham[1] and letters written in 1967 and 1968.

For many years the rural sociologists who participated in the meetings of what was then known as the Association of Southern Agricultural Workers, met with the agricultural economists in joint sessions. These meetings were dominated by the agricultural economists with the two and one-half day meetings usually devoting one half-day session to papers by rural sociologists. Usually most of the agricultural economists went to the Marketing Section while the rural sociology papers were being presented so the intent of getting cross exposure between these two disciplines turned out to be a mostly one way exposure.

The agricultural economists had made some efforts in earlier years to organize themselves into a southern professional group with an identity all its own. These efforts finally paid off with the establishment of the Southern Agricultural Economics Association in 1968. That year was the last of the combined sessions for agricultural economics and rural sociology leaving the rural sociologists without a "home". Dan Alleger would have been chairman of the combined section for the 1969 meeting.

It was decided that each of the existing groups of rural sociologists in the South would be asked what they thought of the idea of trying to establish a Rural Sociology Section. The question had been raised at the fall 1967 meeting of the S-61 Technical Committee and the response was a pessimistic one. The question was raised again at the meeting of the Southern Rural Sociology Research Committee which took place in conjunction with the 1968 ASAW meetings. Here it simply got discussed with no action taken or specific plans made. It was raised once more at the October 1968 meeting of the S-61 Technical Committee and this time a decision was made that the possibility of establishing such a section should be actively explored.

The responsibility for determining the receptiveness of the ASAW Executive Secretary to facilitating a meeting of the rural sociologists was given to Cleland. If he was found to be receptive at this late date in the planning cycle for the meetings, Bill Kuvlesky was to try to get a program together. Dr. Morgan was receptive to the idea and in spite of some pessimism, the effort to organize a section was pursued vigorously and a one day meeting was held. At that meeting officers were elected (Alleger, Chairman; Kuvlesky, Vice-Chairman; and Dunkelberger, Secretary) to do the normal planning required for an ongoing section. A request was made to the ASAW Board of Directors for creation of a Rural Sociology Section. This request was tentatively granted pending the expression of interest in the section at the meeting the next year.

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[1] Dunkelberger, John E. and Janice B. Vanlandingham, Editors, Reflections on the Development of Cooperative Rural Sociology Research in the South, Rural Sociology Series No. 1, Agricultural Experiment Station, Auburn, Alabama, April, 1974.

Dunkelberger made certain the news of the section got out with the opportunities for presenting papers to those with some interest in rural sociology in the region. The original thinking was that a one-day meeting would probably serve the needs of those who would respond. Instead, the number of papers submitted required a full two and one-half days of meetings. Since that time the section has regularly required several parallel sections to accommodate all of the papers submitted. The section has obviously been serving a real need!

Following are the officers of the section since it was formed:

Year	of meeting	Chairman	Chm. elect	Secretary, Program Chairman	Secretary, Prog. Chairman elect
1968-69	Mobile	Alleger	------	Kuvlesky	------
1969-70	Memphis	Alleger	Kuvlesky	Dunkelberger	------
1970-71	Jacksonville	Kuvlesky	Dunkelberger	Sollie	Voland
1971-72	Richmond	Dunkelberger	Sollie	Voland	Boyd
1972-73	Atlanta	Sollie	Voland	Boyd	Cosby
1973-74		Voland	Boyd	Cosby	Miller
1974-75	New Orleans	Boyd	Cosby	Miller	Steelman
1975-76	Mobile	Cosby	Miller	Steelman	Mookherjee
1976-77	Atlanta	Miller	Steelman	Mookherjee	McLean
1977-78	Houston	Steelman	Mookerjee	McLean	Boykin

OPERATIONS PROCEDURE FOR THE RURAL SOCIOLOGY SECTION SOUTHERN ASSOCIATION OF AGRICULTURAL SCIENTSITS (SAAS)

I. SECTION OFFICERS

A. The officers whose term of office are one year:

(1) President
(2) President Elect and Treasurer
(3) Program Chair
(4) Program Chair Elect

II. NOMINATING COMMITTEE

A. At each annual Rural Sociology Section, SAAS, meeting a nominating committee shall be appointed by the President. This committee shall present candidates for the section officers to the Rural Social Section members in attendance. Care should be exercised to insure the rotation of office holders among section members and representative institutions, agencies, and organizations.

III. ELEVATION OF OFFICERS

A. Elevation of officers is customarily from Program Chair Elect to Program Chair, from Program Chair to President Elect and Treasurer, and from President Elect and Treasurer to President.

IV. FILLING A VACANCY

A. If the President resigns, the President-Elect and Treasurer is elevated to the position of President. The newly designated President will then request the institution, agency, or organization represented by the former President to name an interim replacement for the President Elect and Treasurer office.

B. If any other officer resigns, the President shall request the institution, agency, or organization represented by the former officer to name an interim replacement for the given office.

C. In the event an institution, agency, or organization either declines or is unable to name an interim replacement for any vacancy, the President will appoint an interim replacement.

V. RESPONSIBILITIES OF RURAL SOCIOLOGY OFFICERS

A. The duty of the President is to transact the business of the section and to conduct the annual meeting of the section.

B. The duty of the President Elect and Treasurer is to act for the President when necessary.

C. The duties of the Program Chair are to develop a program for the annual meeting; to collect, bind, and distribute the papers presented at the annual meeting and serve as custodian of the records of the section during each given term of office. At the termination of each term, the section records are to be transferred to the new Program Chair.

D. The duty of the Program Chair Elect is to act for the Program Chair when necessary.

E. During any given year, if the position of Program Chair is not filled for any reason, the President will be responsible for developing a program for the annual meeting. If a President does develop a program for a given annual meeting, the President may, at that annual meeting, instruct the membership to designate another individual to be responsible for collecting, binding, and distributing the section PROCEEDINGS.

VI. PROCEEDINGS

A. Each individual submitting a paper title and abstract to the Program Chair prior to the deadline, whose paper title appears on the given annual meeting program, and who delivers the paper at the given annual meeting, shall have the opportunity to prepare multiple copies of that paper for the Rural Sociology Section PROCEEDINGS.

B. The Program Chair shall distribute, to these individuals, the guidelines for preparation of manuscripts, including the number of copies, for inclusion in the PROCEEDINGS. The number of copies required for binding may be designated by the section officers.

VII. DISTRIBUTION OF PROCEEDINGS

A. The basic method of distributing copies of the PROCEEDINGS to section members is specified in section VIII of this OPERATIONS statement.

B. In addition to the list specified in Section VIII, copies of the PROCEEDINGS shall be distributed to:

(1) Appropriate administrative officers of institutions represented by Section members. This includes all Land-Grant institutions in the South.

(2) Representatives of appropriate agencies and organizations. This includes the United States Department of Agriculture and Farm Foundation.

(3) Appropriate libraries, clearinghouses, and official social science depositories.

VIII. RURAL SOICOLOGY SECTION REGISTRATION FEES AND TREASURY

A. A $7.50 registration fee shall be collected from Rural Sociology registrants at Southern Association of Agricultural Scientists annual meeting registration. Full-time students will not be required to pay the $7.50.

B. The names obtained from this registration shall comprise the basic mailing list for receipt of the PROCEEDINGS.

C. The funds collected from the registration shall be the responsibility of the President Elect for the year following each term of office; e.g., the 1978-1979 President-Elect shall be responsible for the funds, 1979-1980.

D. Following each annual meeting, and after the PROCEEDINGS are compiled, the out-going President-Elect shall reimburse the institution, agency, or organization in which the out-going Program Chair is employed, for the cost of materials to bind the PROCEEDINGS. Any excess funds shall be considered a Rural Sociology Section Treasury.

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*Approved by the Rural Sociology Section membership at the 1978 annual meeting.

MINUTES - 1977 ANNUAL MEETING

Southern Association of Agricultural Scientists, Rural Sociology Section*

The 1977 annual meeting was held February 6-9, 1977 in Atlanta, Georgia. The first business meeting of the Rural Sociology Section was called to order by H. Max Miller, 8:45 p.m., February 7. Chairmand Miller appointed a Nominating Committee to be chaired by Dr. James H. Copp.

Chairman Elect Virginia P. Steelman then moderated a panel discussion on the topic, "Pros and Cons of Formal Organization of a Rural Sociology Section." The panel members were: Arthur G. Cosby, George W. Ohlendorf, Nelson L. Jacob, and Charles L. Cleland.

The second business meeting of the 1977 conclave was called to order by Chairman Miller, 7:30 p.m., February 8. The topic, pros and cons of formal organization of a rural sociology section was discussed. It was emphasized that tasks required for formal organization would call for intensive input by a few individuals and a strong commitment from the entire group. Further discussion did not reveal such a commitment.

Dr. Miller introduced the question of publishing of PROCEEDINGS from papers presented at annual meetings. Four suggestions came from the audience:

(1) attempt to continue as we are currently preparing PROCEEDINGS.

(2) prepare no PROCEEDINGS.

(3) publish a one-sheet (two-page) summary of each paper presented at the annual meetings; e.g., RURAL SOCIOLOGY-SAAS - ABSTRACTS.

(4) allow up to six sheets (twelve pages) but require a remittance ($10-$20), from each author, to the Secretary, to partially offset the cost of preparing PROCEEDINGS.

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* The 1976-1977 Officers:
Chairman - H. Max Miller
Chairman Elect - Virginia P. Steelman
Secretary - Harsha N. Mookherjee
Secretary Elect - Edward L. McLean

Dr. Arthur G. Cosby moved that suggestion (4) be formally recommended at the 1978 annual business meeting. A second was received and the motion was unanimously approved by those in attendance.

Dr. Edward L. McLean moved that the 1978 PROCEEDINGS be prepared as in previous years. A second was received and the motion was unanimously approved by those in attendance.

Dr. Arthur G. Cosby moved that the officers of the Rural Sociology Section, Southern Association of Agricultural Scientists, be retitled:

(a) President

(b) President Elect

(c) Program Chair

(d) Program Chair Elect

A second was received and the motion was unanimously approved by those in attendance.

Dr. Miller then called on Dr. James H. Copp for a Nominating Committee report. Dr. Copp reported the following slate of nominees for 1977-1978 officers:

President - Virginia P. Steelman
President Elect - Harsha N. Mookherjee
Program Chair - Edward L. McLean
Program Chair Elect - William C. Boykin

Dr. Copp moved that this slate be elected by acclamation. A second was received and the motion was unanimously approved by those in attendance.

Dr. Harsha N. Mookherjee asked that all authors forward copies of their papers to him, as soon as possible.

The 1977-1978 Program Chair was instructed to determine if a document exists that defines membership in the Rural Sociology Section. (A document is available, prepared by a committee in 1971: Dave Ruesink, Chairman; Dan Alleger, Mel Knapp, and Ken Wilkinson; and approved at the 1972 annual business meeting.)

The meeting was adjourned, 9:00 p.m., February 8, 1977.

MINUTES - 1978 ANNUAL MEETING

Southern Association of Agricultural Scientists
Rural Sociology Section*

The 1978 annual meeting was held February 5-8, 1978 at the Shamrock Hilton Hotel in Houston, Texas. The business meeting was called to order by Dr. Virginia P. Steelman, 8:00 p.m., February 7. President Steelman appointed a Nominating Committee to be chaired by George W. Ohlendorf.

Dr. Steelman asked for consideration of old business, noting that the question of publishing PROCEEDINGS from papers presented at the annual meetings must be resolved. A suggestion, from the 1977 annual meeting was discussed, that the Rural Sociology Section, "allow up to six sheets (twelve pages) but require a remittance ($10-$20) from each author, to the Secretary, to partially offset the cost of preparing PROCEEDINGS".

Deliberations followed and then Dr. H. Max Miller made a motion containing the following provisions:

1. A $7.50 registration fee shall be collected from Rural Sociology registrants at Southern Association of Agricultural Scientists annual meeting registration. Full-time students will not be required to pay the $7.50.
2. The names obtained from this registration shall comprise the basic mailing list for receipt of the PROCEEDINGS.
3. The funds collected from the registration shall be the responsibility of the President Elect for the year following each term of office; e.g., the 1978-1979 President-Elect shall be responsible for the funds, 1979-1980.
4. Following each annual meeting, and after the PROCEEDINGS are compiled, the out-going President-Elect shall reimburse the institution, agency, or organization in which the out-going Program Chair is employed, for the cost of materials to bind the PROCEEDINGS. Any excess funds shall be considered a Rural Sociology Section Treasury.

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*The 1977-1978 Officers:

President	-	Virginia P. Steelman
President Elect	-	Harsha N. Mookherjee
Program Chair	-	Edward L. McLean
Program Chair Elect	-	William C. Boykin

A second was received for this motion and it was unanimously approved by those in attendance.

Dr. John E. Dunkelberger moved that title of the office "President Elect" be changed to "President Elect and Treasurer". A second was received for this motion and it was unanimously approved by those in attendance.

Dr. William W. Falk moved that the "Operations Procedures for the Rural Sociology Section" (prepared in 1971 by a committee: Dave Ruesink, Chairman; Dan Alleger, Mel Knapp, and Ken Wilkinson; and approved at the 1972 annual business meeting) be appropriately revised by the Program Chair. A second was received for this motion and it was unanimously approved by those in attendance.

Dr. George W. Ohlendorf moved that the revised "Operations Procedure for the Rural Sociology Section" and the Minutes of the 1977 and 1978 business meetings be placed in the 1978 PROCEEDINGS. A second was received and this motion was unanimously approved by the Rural Sociology Section Participants.

President Steelman then called on Dr. Ohlendorf for a Nominating Committee report. Dr. Ohlendorf reported the following slate of nominees for the 1978-1979 officers:

President - Harsha N. Mookherjee
President Elect and Treasurer - Edward L. McLean
Program Chair - William C. Boykin
Program Chair Elect - Wolfgang Frese

Dr. Ohlendorf moved that this slate be elected by acclamation. A second was received and this motion was unanimously approved by the Rural Sociology Section participants.

The meeting was adjourned at 9:15 p.m., February 7, 1978.

Section R

Annual Meeting Program - Rural Sociology Section, Southern Association of Agricultural Scientists, February 5-8, 1978, Shamrock Hilton, Houston, Texas

ANNUAL MEETING PROGRAM - RURAL SOCIOLOGY SECTION, SOUTHERN ASSOCIATION OF AGRICULTURAL SCIENTISTS, FEBRUARY 5-8, 1978, SHAMROCK HILTON, HOUSTON, TEXAS

PLENARY SESSION

MULTIDISCIPLINARY RESEARCH: CONTRIBUTIONS TO UNIVERSITY RESEARCH AND PUBLIC SERVICE PROGRAMS

Chair: Alvin L. Bertrand, Louisiana State University

Guest Speakers:

CLIFTON D. BRYANT, HEAD, DEPARTMENT OF SOCIOLOGY, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

SARAH M. SHOFFNER, DIRECTOR, HOME ECONOMICS CENTER FOR RESEARCH, UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

LUTHER G. TWEETEN, REGENTS PROFESSOR OF AGRICULTURAL ECONOMICS, OKLAHOMA STATE UNIVERSITY

OCCUPATIONAL PRESTIGE

Chair: Harsha N. Mookherjee: Tennessee Technological University

A PRESTIGE SCALE FOR AGRICULTURAL OCCUPATIONS. Arthur G. Cosby, Texas A&M University.

THE GENERALIZABILITY OF A PRESTIGE SCALE FOR AGRICULTURAL OCCUPATIONS. Evans W. Curry, Texas Technological University, and Arthur G. Cosby, Texas A&M University.

SOURCES OF VARIATION IN THE PRESTIGE OF AGRICULTURAL OCCUPATIONS: FARM BACKGROUND, RESIDENCE AND SEX. Lianne M. Frank and Arthur G. Cosby, Texas A&M University.

OCCUPATIONAL PRESTIGE (Continued)

AN EXAMINATION OF THE RELATIONSHIPS BETWEEN CERTAIN EDUCATIONAL VARIABLES AND THE OCCUPATIONAL EXPECTATION EXPRESSED BY COLLEGE STUDENTS OF AGRICULTURE. Lawrence W. Drabick, North Carolina State University.

Discussants:
Joseph J. Molnar, Auburn University
Wolfgang Frese, Mississippi State University.

STATUS ATTAINMENT

Chair: Virginia Smith, Auburn University

RACE AND SEX DIFFERENCES IN ASPIRATION FORMATION PROCESSES OF SOUTHERN RURAL YOUTH. Frank M. Howell and Wolfgang Frese, Mississippi State University.

THE ROLE OF FAMILY BACKGROUND IN THE CHOICE OF MAJOR BY STUDENTS IN HOME ECONOMICS. Jerri Hayes, Elmira Gilbert, and John Dunkelberger, Auburn University.

RACIAL COMPOSITION OF SCHOOLS AND MOBILITY PROJECTIONS OF SOUTH CAROLINA BLACK YOUTH. Glenna Colclough, Clemson University.

Discussants:
Arthur G. Cosby, Texas A&M University
George W. Ohlendorf, Louisiana State University

RURAL AND URBAN CULTURE

Chair: James H. Copp, Texas A&M University

THE SOCIAL INTEGRATIVE EFFECT OF RITUAL: THE LOUISIANA SHRIMP AND PETROLEUM FESTIVAL AS A CASE IN POINT. Stephen E. Doeren, Wichita State University.

VARIETIES OF RURAL YOUTH IN THE U.S.: COMPARISONS OF LIFE SITUATIONS IN THREE REGIONS - WEST, SOUTH AND EAST. William P. Kuvlesky, Texas A&M University.

RURAL AND URBAN CULTURE (Continued)

RURAL - URBAN DIFFERENTIALS IN THE FATALISTIC WELTANSCHAUUNG. Dennis L. Peck, East Texas State University.

THE IRISH TRAVELERS OF EDGEFIELD COUNTY, SOUTH CAROLINA. William W. Ritter, University of South Carolina at Aiken.

AN OVERALL COUNTY QUALITY OF LIVING INDEX. Y. N. Lin, University of Maryland and Charles Cleland, University of Tennessee.

Discussants:
Richard Machalek, Trinity University
Harsha N. Mookherjee, Tennessee Technological University

RURAL POVERTY

Chair: Raj P. Mohan, Auburn University

PERCEPTION OF INCENTIVES AND CONSTRAINTS BY THE RURAL LOW INCOME FAMILIES IN THE ACCEPTANCE OF NEW IDEAS AND ECONOMIC DEVELOPMENT PROGRAMS. J. S. Dhillon, Florida A&M University.

THE SOCIOECONOMIC ELEMENT AS A DOMINANT FACTOR IN THE RESOURCE STATUS OF THE LIMITED RESOURCE FARM HOUSEHOLD. Alfred L. Parks, Prairie View A&M University.

PHILANTHROPY AND IDEOLOGICAL DISTORTIONS ON BLACK AND POOR WHITE PLANTATION LIFE IN THE 1930's. John H. Stanfield, University of Texas at San Antonio.

THE CULTURE OF POVERTY AMONG RURAL MIDDLE GEORGIA FAMILIES. Melvin E. Walker, Jr.; and E. Y. Beauford, Fort Valley State College.

Discussants:
Forrest A. Deseran, Louisiana State University
Peggy A. Shifflett, Texas A&M University
William D. Stanley, Texas A&M University

COMMUNITY SATISFACTION

Chair: Bardin H. Nelson, Texas A&M University

DETERMINANTS OF COMMUNITY SATISFACTION. Howard W. Ladewig, Texas A&M University, and Glenn C. McCann, North Carolina State University.

DETERMINANTS OF PERCEIVED QUALITY OF LIFE IN THE RURAL SOUTH: AN EXPLORATORY ANALYSIS. Tatree Nontasak and Wolfgang Frese, Mississippi State University.

LIFE SATISFACTION: A STRUCTURAL SYSTEMS PERSPECTIVE. Nicholas A. Holt, University of Georgia.

A LONGITUDINAL ANALYSIS OF SATISFACTION WITH SELECTED COMMUNITY SERVICES IN A NONMETROPOLITAN AREA. Sally R. Purohit and Joseph J. Molnar, Auburn University.

Discussants:
C. Milton Coughenour, University of Kentucky
Virginia P. Steelman, Louisiana State University

OCCUPATIONAL CHOICE

Chair: Carlton R. Sollie, Mississippi State University

WHAT ARE SOME BASIC INTEREST AND OCCUPATIONAL INTEREST SIMILARITIES OF HIGH SCHOOL STUDENTS WHO HAVE EXPRESSED AN INTEREST IN NATURAL RESOURCE CAREERS? David L. Groves, State University College at Brockport; and V. B. Cauley, Jr., and R. K. Roberts, Virginia Polytechnic Institute and State University.

RECRUITMENT TO TEACHING: CAREER EXPECTATIONS OF SOUTH CAROLINA YOUNG PEOPLE. Thomas A. Lyson, Clemson University.

AN ANALYSIS OF THE EFFECTS OF THE CHANGING MEANING OF RURALITY UPON THE OCCUPATIONAL ORIENTATIONS OF YOUTH. Larry D. Hall, Mary Hardin-Baylor College.

OCCUPATIONAL CHOICE AMONG COLLEGE AGRICULTURAL STUDENTS AND THE COMMITMENT TO A CAREER IN AGRICULTURE. Carol D. Payne and John E. Dunkelberger, Auburn University.

Discussants:
William W. Falk, Louisiana State University
Thomas A. Lyson, Clemson University

COMMUNITY DEVELOPMENT

Chair: Dempsey H. Seastrunk, Texas A&M University

A FIELD THEORY APPROACH FOR IDENTIFYING PROGRAM AND COMMUNITY LEADERSHIP ROLES: A CASE STUDY. Lionel Beaulieu, University of Florida.

A CONCEPT OF IMPACT PROGRAMMING. C. L. Taylor and R. William Seiders, University of Florida.

COMMUNITY DEVELOPMENT: PROBLEMS AND OPPORTUNITIES FOR THE GENERALIST. Charles B. Notess, Winthrop College.

Discussants:
Howard W. Ladewig, Texas A&M University
Pradip Ghosh, Southern University

DEMOGRAPHY AND ECOLOGY

Chair: James Tarver, University of Georgia

USING GENEOLOGICAL DATA TO ASSESS MIGRATION OUT OF AN AGRICULTURAL COMMUNITY: THE CASE OF MANTI, UTAH, 1849-1949. Jerry N. Harrison, New Mexico State University.

NET MIGRATION AND REGIONALIZATION OF COUNTIES IN THREE STATES. Paul E. Lovingood, University of South Carolina; and Edward L. McLean and Stephen C. Lilley, Clemson University.

EDUCATIONAL-OCCUPATIONAL PROFILES OF AMERICAN RURAL YOUTH IN THE 1970's. Peggy J. Ross, Economic Research Service United States Department of Agriculture.

Discussants:
Gladys Bowles, University of Georgia
Steve Murdock, Texas A&M University

METHODOLOGY

Chair: John V. D. Saunders, Mississippi State University

THE RELATION OF PERCEIVED INFLUENCE AND FREQUENTY OF BEING THE RECIPIENT OF DECISION-MAKING CONTACT: A CASE STUDY. H. Max Miller and Gerald Thurmond, University of Georgia.

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METHODOLOGY (Continued)

AN INVENTORY OF FOREST FIRE PREVENTION PROGRAMS IN THE SOUTH: A BASELINE FOR EVALUATION. G. Richard Wetherill, Forest Service, United States Department of Agriculture.

AN EMPIRICAL EVALUATION OF MISSING VALUE PROCEDURES. John K. Thomas, Edward Ulbricht, and John Womack, Texas A&M University.

Discussants:
Thomas J. Durant, Jr., Louisiana State University
Michael Kearl, Trinity University

AGRICULTURAL INSTITUTIONS

Chair: William C. Boykin, Alcorn State University

THE IMPORTANCE OF MONEY: THE INFLUENCE OF SIZE AND SOURCE OF INCOME ON FARMERS' ATTITUDES TOWARD PESTICIDES. Louis M. Holscher, New Mexico State University.

SOME AMBIGUITIES IN THE MEASUREMENT OF AGRICULTURAL STRUCTURE. Ronald C. Wimberly and Michael J. Belyes, North Carolina State University.

CHARACTERISTICS OF MINORITY-OWNED BUSINESS ENTERPRISES IN SELECTED SOUTH CAROLINA URBAN AREAS. J. F. Pittman, Stephen R. Pettigrew, and J. E. Thompson, Clemson University.

Discussants:
C. Milton Coughenour, University of Kentucky
Melvin E. Walker, Jr., Fort Valley State College

RURAL INSTITUTIONS

Chair: Charles L. Cleland, University of Tennessee

TRANSIT NEEDS OF THE RURAL ELDERLY. Charles B. Notess, Winthrop College.

SOCIAL SERVICES IN RURAL AREAS BEFORE AND AFTER TITLE XX. Pill Jay Cho, North Carolina A&T University.

SOCIAL, HEALTH AND ENVIRONMENTAL FACTORS ASSOCIATED WITH INFANT LOSS RATES IN MISSISSIPPI COUNTIES. Ellen S. Bryant, Mississippi State University.

HEALTH HISTORICAL FINDINGS AMONG LOW INCOME, BLACK FAMILIES. Edwina D. Gray and Eunsook T. Koh, Alcorn State University.

ANOMIA, ROLE STRAIN AND THE FEMALE FAMILY HEAD. Annetta Richardson and Joseph J. Molnar, Auburn University.

Discussants:
Patricia Guseman, Texas A&M University
Kokos Markides, University of Texas Medical School
John Moland, Southern University

EXTENSION SOCIOLOGY

Chair: David C. Ruesink, Texas A&M University

COUNTERING COMMUNITY STRUCTURE: PROBLEMS ENCOUNTERED IN PROVIDING QUALITY TO VOCATIONAL EDUCATION PROGRAMS IN LESS DEVELOPED BUT EMERGING RURAL COUNTIES. Taylor Byrd, Jr.; Sanath Reddy, and Gerald Wheelock, Alabama A&M University.

PERCEPTION OF COMMUNITY PROBLEMS BY RURAL RESIDENTS AND COUNTY LEADERS: IMPLICATIONS FOR CITIZEN PARTICIPATION. Nelson L. Jacob and Stephen C. Lilley, Clemson University.

EVALUATION OF THE EFFECT OF COOPERATIVE EXTENSION OFFICE EDUCATIONAL PROGRAMS ON ATTITUDES TOWARD KNOWLEDGE OF LAND USE PLANNING. David Miller, Diana Danforth, Shirley Callaway, and Donald E. Voth, University of Arkansas.

EXTENSION'S ROLE IN ENVIRONMENTAL QUALITY EDUCATION PROGRAMS. R. William Seiders and C. L. Taylor, University of Florida.

Discussants:
John Pelham, Texas A&M University
Eddie D. Wynn, Clemson University

POTPOURRI

Chair: Prakash C. Sharma, Rider College

HOW THE RURAL POOR CHOOSE AGENCY SERVICES: COMMUNICATION AND TRANSPORTATION AS FACTORS IN THE DECISION MAKING PROCESS. Marguerite R. Howie and Kathleen Hanna, South Carolina State College.

DEALING WITH AGE: A METHODOLOGICAL NOTE. Hanns G. Pieper, University of Evansville, and H. Max Miller, University of Georgia.

KILLING SOCIETY WITH THE RIGHT TO DIE. H. Wayne Hogan, Loyola University.

THE INTRODUCTORY SOCIOLOGY CLASS: HOW TO COPE AND REACH. Susie L. Willis, Hinds Junior College.

Discussants:
William P. Kuvlesky, Texas A&M University
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STUDENTS IN COLLEGES OF AGRICULTURE: A PRELIMINARY OVERVIEW
(a panel from Southern Regional Project S-114)

Chair: Carlton R. Sollie, Mississippi State University

Participants:
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SOCIAL ORGANIZATION FOR DEVELOPMENT OF LOW INCOME RURAL COUNTIES
(Southern Regional Project S-120)

Chair: Glenn C. McCann, North Carolina State University

DECISION-MAKING FOR DEVELOPMENT: A SOCIOMETRIC ANALYSIS OF INFLUENTIALS IN A RURAL COUNTY. Stephen C. Lilley and Nelson L. Jacob, Clemson University.

SOCIAL ORGANIZATION FOR DEVELOPMENT OF LOW INCOME RURAL COUNTIES (Southern Regional Project S-120) (Continued)

THE LINKAGE OF COMMUNITY DECISION-MAKING STRUCTURES TO ECONOMIC DEVELOPMENT: A THEORETICAL PERSPECTIVE. H. Max Miller, University of Georgia.

ORGANIZATIONS AND CONSTITUENCIES: CONCEPTUAL AND METHODOLOGICAL ISSUES IN DETERMINING RELEVANT PUBLICS OF RURAL DEVELOPMENT ORGANIZATIONS. Forrest A. Deseran and John Leinhardt, Louisiana State University.

CONSTITUENCIES, CLIENTS, AND AGREEMENT IN RURAL DEVELOPMENT. Donald E. Voth, University of Arkansas.

QUALITY OF LIFE VARIABILITY IN RURAL DEVELOPMENT: EXPANSIVE V. NONEXPANSIVE GROWTH. Stephen G. Sapp and Peter F. Korsching, University of Florida.

SUPPORT FOR INDUSTRIALIZATION AS A MEANS TO RURAL DEVELOPMENT: PRELIMINARY FINDINGS. Edward L. McLean and Glenna Colclough, Clemson University.

Discussants:
Charles L. Cleland, University of Tennessee
Peter F. Korsching, University of Florida
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Section S

Names and Address of the Participants in the 1978 Annual Meeting

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